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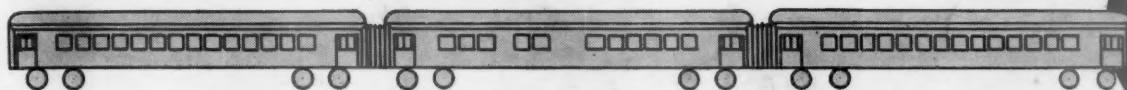
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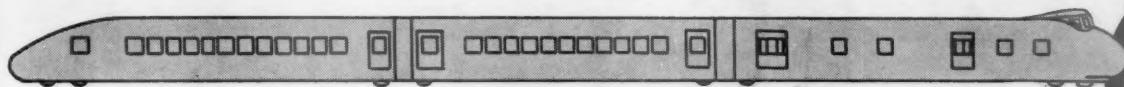


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AT 100 M.P.H.

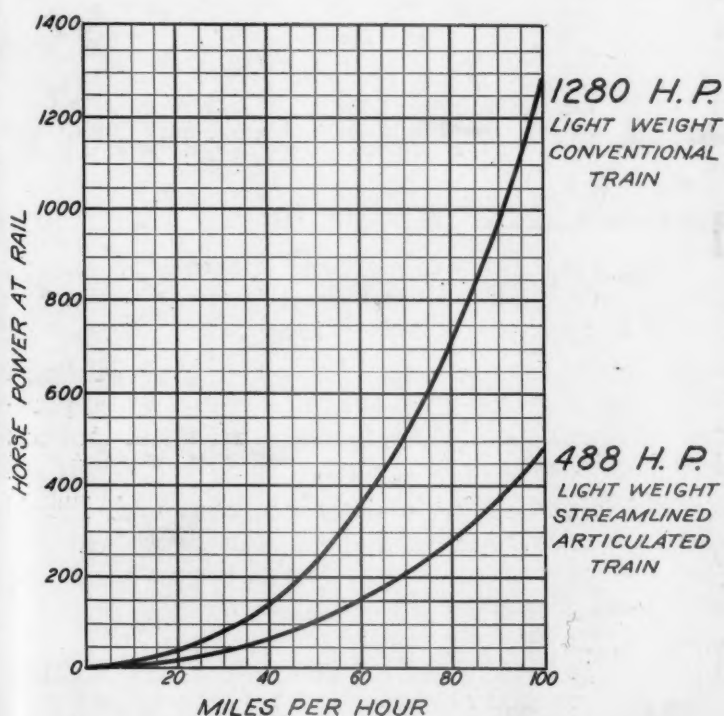


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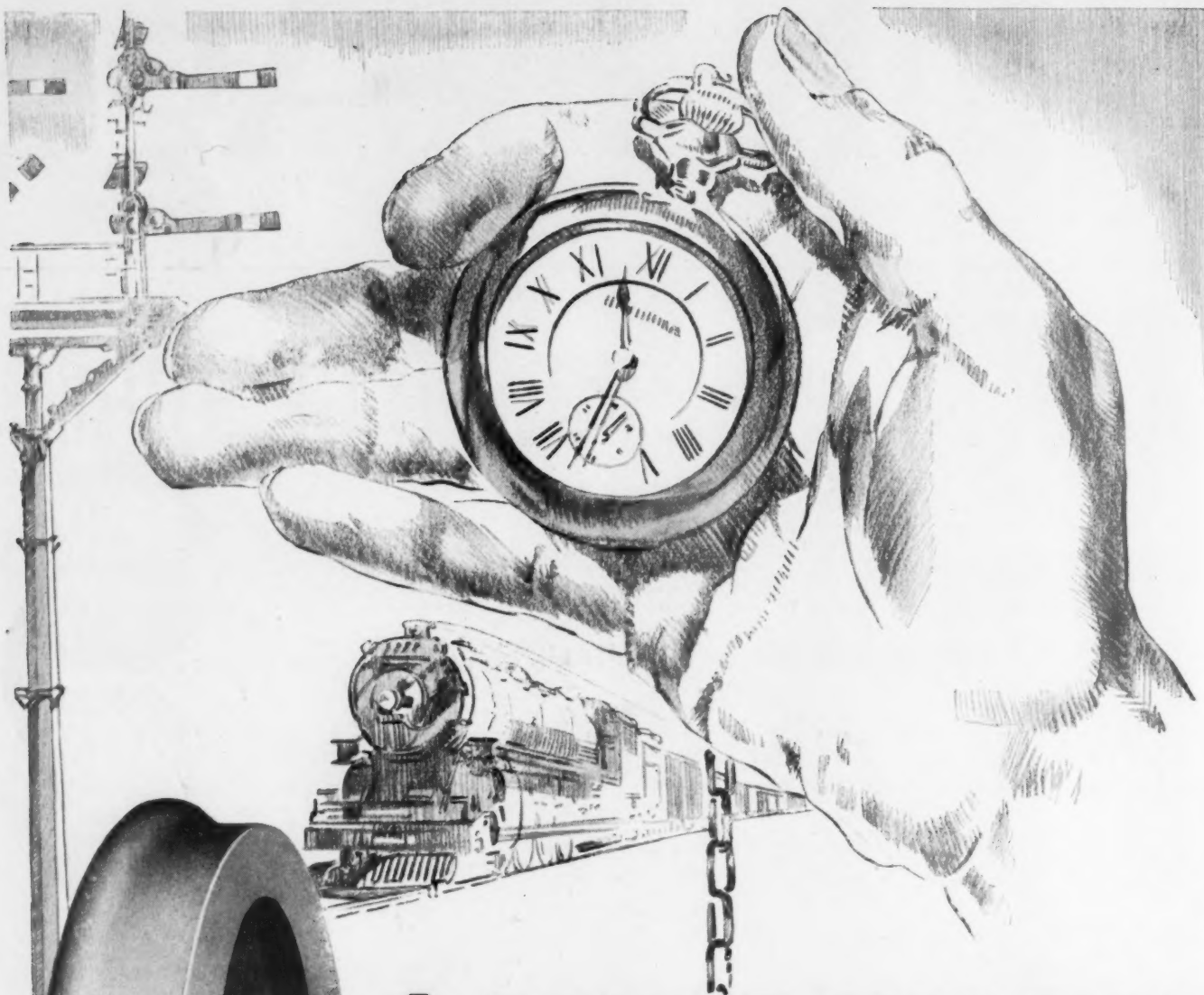
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Published every Saturday by the
Simmons-Boardman Publishing
Company, 1309 Noble Street,
Philadelphia, Pa., with editorial
and executive offices: 30 Church
Street, New York, N. Y., and 105
West Adams Street, Chicago, Ill.

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CLEVELAND
Terminal Tower

WASHINGTON
832 National Press Building

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58 Main St.

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The Railway Age is a member of
the Associated Business Papers (A.
B. P.) and of the Audit Bureau of
Circulations (A. B. C.).

Subscriptions, including 52 regular
weekly issues, payable in advance
and postage free; United States and
possessions, 1 year \$6.00, 2 years
\$10.00; Canada, including duty, 1
year \$8.00, 2 years \$14.00; foreign
countries, 1 year \$8.00, 2 years
\$14.00.

Single copies, 25 cents each.

Vol. 96

April 7, 1934

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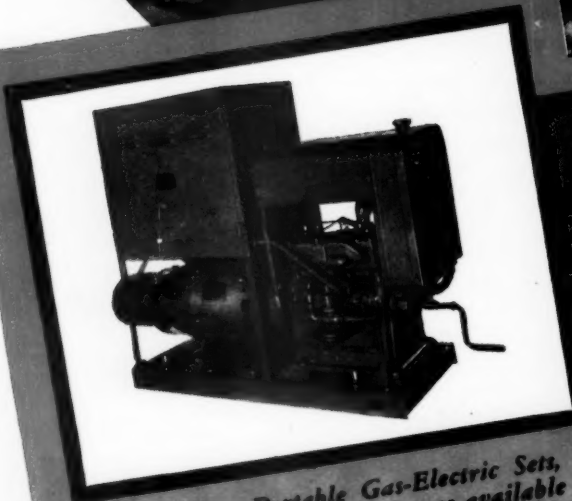
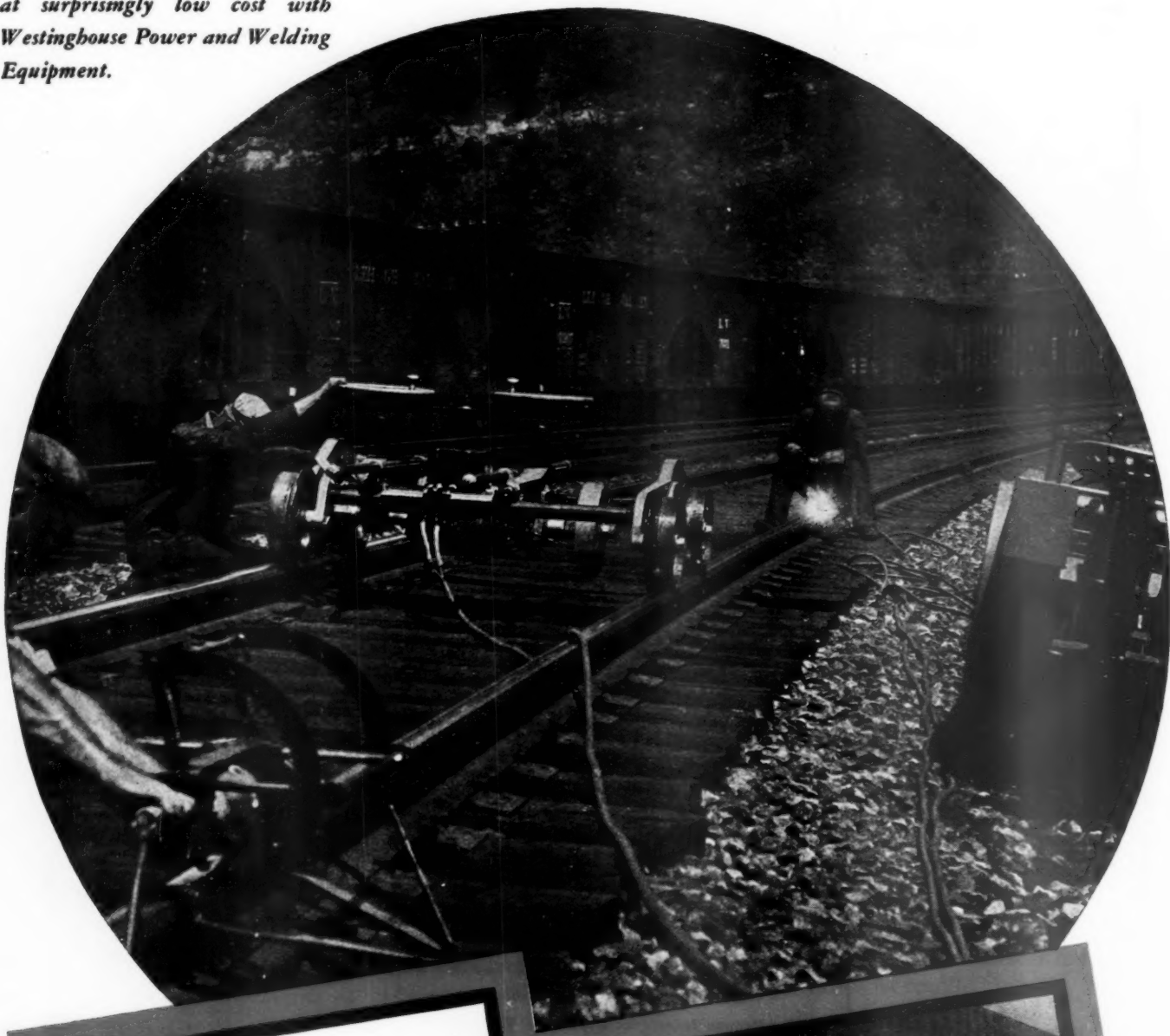
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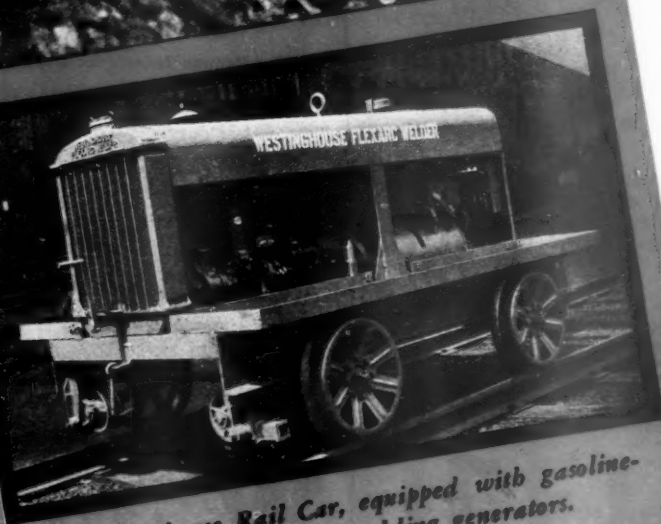
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Solving the Problem of L. C. L. Freight Traffic

Whatever may be the opinion as to the detailed recommendations of the Co-ordinator's Section on Transportation Service on the solution of the problem presented by l.c.l. traffic, the railways are at least indebted to it for clarifying the many aspects of the problem and pointing out just how serious it is. The report is, as a matter of fact, one of the most thorough surveys of the kind ever made on a nation-wide basis in the transportation field, and represents a form of research of which a great deal more is needed.

Some railroad men have, from time to time, attempted to dismiss the l.c.l. business from consideration on the ground that the railways make no money out of it and that the more of it that is taken away by the trucks and forwarders the more the railroads save. This contention, as the survey shows, is not in accord with the evidence. Moreover, it leaves out of account the fact that the truckers and forwarders have never offered to take all the traffic, but only that part which is most profitable. The railways with much less traffic have the same overhead expense and have the same nation-wide service to maintain as before. The loss of l.c.l. traffic, therefore, largely increases the unit cost of handling the traffic remaining on the rails. Unless and until some other agency comes along and offers to take all the l.c.l. traffic, the railways will be better off in proportion as they can hold this traffic on the rails, regardless of whether it is a profitable business or not. The survey shows, moreover, that the business is profitable to the extent that if the railways had not had it their net income in 1932 would have been \$73,000,000 less than it was.

Light Loading of Cars

Another important fact to be borne in mind with regard to this traffic is that no system of transportation can be considered satisfactorily efficient which utilizes a vehicle weighing 25 tons to transport a paying load of 3.6 tons. This amount of freight is barely a truck load and, on the face of things, it would appear imperative that steps should be taken either to consolidate traffic so as to increase the average load per

car very materially or to divert all light movements to trucks. In essence, the report recognizes these facts, and it also calls attention to the costly duplication of service and facilities, the complex rate structure and proceeds to a conclusion that all express, l.c.l. and forwarding operations should be consolidated in the hands of two competing railroad-controlled agencies in a manner to encourage direct routing while protecting the existing revenues of the individual railroads; that all merchandise should be given collection and delivery service and accelerated to an overall speed of not less than 20 m.p.h.; that tariffs and packing requirements should be simplified; and that rail and highway service should be co-ordinated in such a way as to utilize each in the zone where it is the more efficient agency.

That some inter-railroad consolidation of l.c.l. traffic would be recommended was a foregone conclusion, since the multiplicity of routes and stations obviously make for costly additional handlings and light loading of cars. Whether or not, however, two competing agencies, each offering complete express and l.c.l. service is the ideal solution cannot be accepted without some discussion. Some will doubtless believe that consolidation of this traffic should not go so far. Others will find, even in two companies, a needless duplication, and in particular because such a move would require the establishment of competing express facilities in most of the larger cities of the country which now are served by but one company.

A Fair Exchange with the Trucks

There will probably not be much opposition to the proposals for the general application of collection and delivery, simplified tariffs and easier packing regulations to this class of business. The problem of co-ordinating rail and highway operations so as to use each agency only in its field of true economic superiority, however, will be more difficult to work out and its detailed application may give rise to some controversy, but there are few who can find anything to quarrel about in the principle upon which co-ordination should be based. It is very interesting to note that the

report indicates no deprivation of either the railways or the trucks of their present volume of tonnage; the railways would simply turn over to the trucks approximately 10,000,000 tons of traffic now moving by railway which the trucks can handle more economically, receiving in return an equivalent tonnage now moving by highway which could be more efficiently handled by rail. Such an exchange ought to be welcomed by highway operators, no less than by the railroads, because truck operations in spite of their growth are not apparently very profitable (a return in 1932 of only approximately 2 per cent on the limited capital investment being indicated).

Criticism Not Warranted

Co-ordinator Eastman's insistence, in releasing this study, that no criticism of railway management was intended is a point well taken. When the present method of handling l.c.l. was developed, it was probably as efficient as any that could have been devised. The economic range of horse-drawn vehicles was extremely limited and a multiplicity of railroad freight stations was an economic necessity—and with such a multiplicity of stations, little economy could have been served by the consolidation of traffic. The gas engineers who brought gas lighting to a high state of perfection could not be blamed because electricity came along and largely supplanted this use of gas. Neither, by the same token, can the railways be blamed for the present situation with regard to their l.c.l. traffic. But the gas engineers and merchandisers deserve even more credit for the manner in which they combined forces with the electric power industry, each concentrating its effort on the job to which it was best fitted. A similar amicable division on economic grounds of the transportation business between railways and trucks has now been brought a step nearer by the recommendations of the Co-ordinator's Section of Transportation Service with respect to revamping the handling of l.c.l. traffic—trucks being used for pick-up and delivery and for practically all hauls up to 75 miles and railways used for all distances over 150 miles and a considerable proportion of those between 75 and 150 miles.

Truck Regulation Should Come First

It is one thing to recommend such a division of traffic and quite another to bring it about. The railways may, provided the present labor clause of the Emergency Transportation Act is liberalized to permit it, pool their l.c.l. traffic, reduce the number of stations, simplify accounting and the rate structure and use trucks exclusively to handle the short-haul traffic. But they may do all this and still not solve the l.c.l. problem unless some means is found to prevent trucks from competing for business beyond the true economic zone of truck operation. And that zone must be accurately defined, which it cannot be until truck operators are regulated and required to pay adequately for the use of the highways, and until they pay their

transportation employees wages commensurate with those of transportation employees on the railways.

The first step to take in the solution of the problem of l.c.l. traffic is thus identical with the first step indicated in practically every other phase of the transportation problem, namely, to equalize competitive conditions. The present Administration early in its term, when faced with a complex series of troublesome situations, announced its intention of doing "first things first." The first thing, or at any rate one of the first, which should be done in the field of transportation was recognized by President Roosevelt as long ago as the fall of 1932 when he announced his belief that interstate trucking should be regulated by the Interstate Commerce Commission.

The Rayburn bill, H.R. 6836, giving effect to this campaign pledge, is resting in committee in the House of Representatives. It ought to be reported out and passed at the present session of Congress. Otherwise this report of the Section on Transportation Service, excellent as it is, will be "just another report." The transportation problem has been diagnosed and re-diagnosed for several years and all the diagnosticians agree. Is it not time for us to quit multiplying diagnoses and act upon this plenteous and unanimous advice already at hand? L.c.l. shippers, who stand to share handsomely in the \$100,000,000 savings which the Section on Transportation Service estimates can be achieved by co-ordination in this field, should stand shoulder to shoulder with railroad men in demanding that the necessary first step—regulation of truck traffic—be taken forthwith.

Higher Wages or More Jobs?

If American industry is wise there will be an immediate and wholehearted response to the appeal for shorter hours and higher wages made so persuasively by President Roosevelt and General Johnson . . . The purchasing power of our people must be vastly expanded. In no other way can we attain anything approaching enduring prosperity. . . .

Eight hundred thousand railroad workers are still walking the streets in idleness . . . The remedy for this intolerable situation is obvious: Congress should promptly enact the six-hour law sponsored by the Railway Labor Executives' Association.—*From an Editorial in "Labor."*

The *Railway Age* is just as desirous as "Labor" is to see the unemployed railroad workers back on the job again, but it must be evident to anyone who will consider the facts realistically that the six-hour legislation would not only not secure that result but would endanger the jobs of many of the employees who are working now. The six-hour bill, if enacted without providing for increased rates, would bankrupt a large number of railways and create a panic in investment markets, the revival of which is absolutely essential to a return of prosperity. If rates were raised to pass the cost of the shorter basic day on to shippers, the result would be a diversion of traffic from the railways to their highway and waterway competitors so great that the

railways probably would not need as many employees even on the shorter day as they have now.

There is one thing and one thing only which will give jobs to the great majority of unemployed railway workers and that is a revival of railway traffic to pre-depression levels. Traffic on the railways will not return to those levels unless there is a great revival in the capital goods industries, which supply the bulk of the traffic which has vanished, and unless the handicaps which surround the railways in competing for traffic are removed—and one of these handicaps is their high wage costs. The revival of the capital goods industries cannot occur until investors—including railway investors—are satisfied that their capital, if invested, will be reasonably safe and reasonably sure to yield a fair return. Certainly a ruinous increase in labor costs such as is contemplated by the framers of this bill would be the last thing in the world to induce the potential investor to come out of hiding—and until he comes out the depression will continue.

The railways are not getting a fair share of the traffic now moving because their labor costs are so

wage rates, compared with those of railway competitors, are so high. Apparently the labor organizations are determined to attempt to raise the wage level still higher, regardless of the probability that the result would be a further decrease in employment.

Chances of Eliminating Automatic Train Control

During the last few years eight railroads have been granted permission by the Interstate Commerce Commission to discontinue their automatic train control, while two other roads have been permitted to discontinue such equipment on certain territories. However, although 10 of the 44 railroads that were originally required to install train control have since been permitted to remove it, the proportion of the equipment and mileage of protection which has been abandoned is far less.

The maximum amount of equipment in service in 1932 comprised 11,881 miles of road, including 21,745 miles of track, and 10,424 locomotives. The sections of train control discontinued involve 1,627 miles of road, including 1,893 miles of track, and 715 locomotives, or 13.8, 8.7 and 6.8 per cent, respectively, of the total installations. Furthermore, taking into consideration the number of train movements shown in the record of operations of train control, the installations which have been discontinued represent only 6.5 per cent of the operations.

Thus, as explained by S. N. Mills, assistant director of the Bureau of Safety, at the recent convention of the Signal Section, the Interstate Commerce Commission has not permitted wholesale abandonment of train control, and this statement is further substantiated by its recent decision in refusing the Alton's petition to remove its train control. However, the door is not closed to further abandonment of train control, the two most important considerations being changes in traffic and the installation of other signaling facilities such as cab signaling or centralized traffic control.

The commission would undoubtedly give consideration to the utilization of train control. In this connection Mr. Mills remarked that if many more accidents occurred like that at Binghamton, N. Y., it was entirely possible that the public might demand that the Interstate Commerce Commission require the roads to eliminate the use of the forestalling feature in train stop installations.

The railroads have always contended that it would be impracticable to operate their trains efficiently without the use of the forestaller. They might well take steps immediately, therefore, to improve the instruction and supervision of their enginemen, in order to preclude the recurrence of accidents involving the use of the forestaller. A word to the wise should be sufficient.

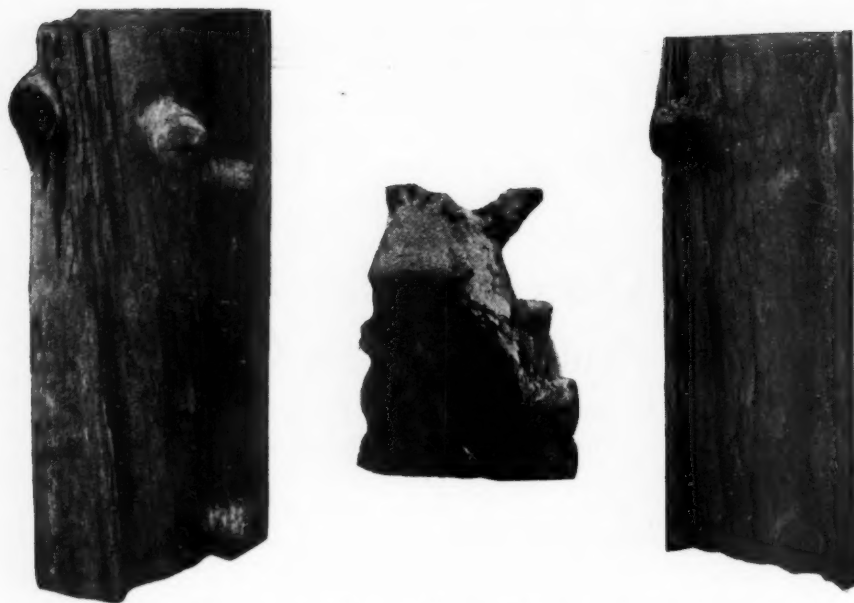
Traffic Development Series Available in Pamphlet Form

In response to many requests for copies of the series of 20 articles on practical ways and means of increasing freight and passenger traffic on the railroads, which appeared in the *Railway Age* from last June until March of the current year, arrangements have been made to reprint the entire series in a convenient pamphlet of approximately 80 pages. Copies of this series will be available while the supply lasts at 20 cents each; or, in quantities of 100 or more, at 15 cents each. Address *Railway Age*, 30 Church Street, New York.

much higher than those of their competitors and because railway transportation is wholly self-supporting whereas railway competitors are supported in part by taxation. If the labor organizations are honestly desirous of getting unemployed men back to work, then they should certainly not be advocating legislation designed to handicap the railways still further in their efforts to secure traffic in competition with rivals who pay their employees a mere fraction of the wages paid by the railways for work of comparable skill. To quote from the scholarly treatise on Inland Transportation by Professor Sidney L. Miller of the University of Iowa:

In the face of price competition that grows increasingly keen it appears that, until rival agencies are burdened with total service costs and certain other restrictions are imposed in the interest of public safety and social policy, *railway workers must choose between a small volume of employment at high wage rates and a greater volume at lesser rates.* (Italics ours.)

Employment is so low now, for one reason, because



Is developing methods and organized program to educate its maintenance forces to best system of fighting these wood-destroying pests

Example of Termite Damage to a Structural Timber, Some of the Decayed Wood Has Been Removed

Burlington Discovers Evidence of Termite Damage

MAINTENANCE officers are facing a new problem in the termite menace which is rapidly becoming widespread and economically serious. Those who are in touch with the situation are aware that termite colonies are appearing in areas that have heretofore been free from infestation. As yet, however, despite the seriousness of the problem, the importance of its solution is only faintly realized by most railway officers because they know so little of the habits and activities of this elusive insect or the extent of the damage of which it is capable.

The termite problem is not new in the sense that termites are new or that they have been introduced into this country from outside sources. Fifty-three species of termites native to the United States have already been identified, and only two species of foreign origin are known to exist in this country, both of the latter being as yet confined to restricted areas of only a few square miles. Termites belong to the oldest family of insects, being related to the cockroaches. In fact, fossil termites of the same genus to which the species belong that are now doing damage in the United States have been found in geological deposits that are known to be many millions of years old. Fundamentally, the problem arises from the fact that this insect is adjusting itself to new conditions and that because of a general lack of knowledge of its habits and activities, effective methods of control have not yet been developed.

Termites Are Forest Scavengers

In the economy of nature the function of termites is to break down and restore the cellulose of dead wood to the soil and the air, in a form that makes it again available as plant food, thus completing the cycle of tree growth. In other words, they are forest scavengers. Under natural conditions they have confined their opera-

tions to the forests, because it was only here that their natural food, dead wood, could be obtained. Under the more artificial conditions of society and industry, however, man has used the products of the forest to erect homes, factories, fences, pole lines, bridges and a wide variety of other structures. At the same time, to provide the material for these structures, the forested areas have been reduced materially.

As a result of this enterprise, vast stores of the natural food of termites are found in the wooden buildings and other structures that are grouped in cities, villages, on farms and elsewhere. At the same time, definite and easily followed highways have been provided for their migration, through the construction of telegraph, telephone and power lines, as well as fences. Termites have not been slow to seize upon the opportunity thus afforded to facilitate migration, the number of their colonies has increased at an astonishing rate, and many new centers of infestation have developed.

Termites are confined to tropical and temperate regions, but within these limits their distribution is worldwide. The fauna of the United States is especially rich, with 55 species, as compared with only 2 in all of Europe. Despite this wide distribution and the number of species, about 1,500, that are known, termites fall into two types—wood-dwelling termites, and earth-dwelling or subterranean termites, although a few of the latter are partly subterranean and partly wood-dwelling.

As their name implies, wood-dwelling termites found their colonies and live in the wood itself. This type is subdivided into dry-wood termites and damp-wood termites. The former are confined to a narrow belt along the coastal region of the southern states from about Norfolk, Va., to San Francisco, Cal. This belt also continues without interruption along the Rio Grande river in Texas and across the southern tier of counties in New

Swarming Flight of Termites from Small Shed, Which Disclosed Their Presence at the Galesburg Timber Treating Plant



Mexico, Arizona and California. In general, dry-wood termites attack only dry, sound wood, being found not infrequently in furniture in dwellings and offices. Damp-wood termites are found only west of the Rocky mountains and at present are of minor economic importance, although they occasionally attack piling and poles in damp locations, water tanks and other structures where they can obtain a continuous supply of moisture.

Subterranean termites establish their colonies in the earth and feed upon wood that is in the ground or in contact with it. Failing a supply that can be reached directly, they erect covered runways or tubes to connect their underground galleries with the food supply. These tubes are composed of varying proportions of earth particles, wood fragments, fecal excretions and, probably, saliva. This type requires a constant supply of moisture which it obtains normally from the ground. This characteristic is in marked contrast with the dry-wood termites, which are able to thrive in wood containing less than 12 per cent of moisture, a content too low to give fungi and other decay-producing organisms a foothold.

Because of its wider range and preponderance in numbers, the subterranean type is responsible for most of the termite damage that is occurring in the United States. Subterranean termites are rarely seen because they shun the light and remain underground or inside the struc-

tural members or other forms of wood upon which they feed. For this reason, the presence of termites in a structure is rarely suspected. In fact, they may almost completely destroy some of the members without giving any external evidence of their presence, so that in most instances their activities are discovered by accident. Even then, unless the person making the discovery is familiar with their habits and methods of attack, he may attribute the trouble to some other cause.

Experience of the Burlington

A typical example of the initial experience of a railway, or rather of the first knowledge that some of its structures were being infested, with termites is that of the Chicago, Burlington & Quincy. This road had not previously experienced trouble from termite attack, although it is now known that there had been a number of cases of infestation that had not been recognized. Having no suspicion that termites were working in any of its structures, the officers of this road were considerably disturbed by reports of termite attack at several widely separated points at about the same time.

Oddly enough, one of the first of these cases of infestation was found at the timber-treating plant at Galesburg, Ill., in the building used for office purposes by the superintendent of timber preservation. An immediate investigation was made to determine whether colonies had been established in the storage yard where they might get into the piles of ties and structural timber that were being seasoned preparatory to treatment. Fortunately, none was found here, but independent colonies were discovered in the building housing the laboratory, in the pile trestle used for unloading coal at the power house, in a small shed near the office and in one of the poles in a power-line serving the plant.

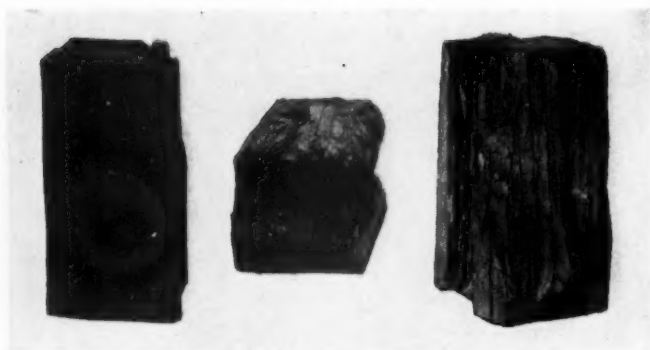
So far as known, this was the first case of infestation recognized in this community. Since this discovery was made, however, a large number of colonies and much damage have been found in all sections of Galesburg, including both residences and industrial buildings, but so far none has been found in any other railway buildings in or near the city.

Freight House Heavily Infested

Among the earliest known cases of infestation was that of the freight house at Alma, Neb. This was an old building, in which the usual inspection indicated that many of the members were failing, apparently from dry rot, although the outward appearance was that of a building in fair condition. Upon closer examination, however,



Damage Done by Termites to Piles in Coal Trestle at Galesburg Timber Treating Plant



Three Views of a Timber Removed from One of the Stations Infested by Termites

termites were found in every part of the structure. When it was torn down to permit the erection of a new freight house, the damage was found to be far more extensive than had been indicated by the various careful inspections that were made after the presence of termites was discovered. No part of the structure had escaped, and many of the timbers were literally honeycombed.

Shortly after this, a similar situation was discovered in the station at Table Rock, Neb. The external appearance of this building was that of a structure in fair condition. There were several evidences of failure, however, which, as at Alma, were at first attributed to dry rot. This building was renewed with a combination station of brick, stone and stucco. In preparation for this renewal, the old building was dismantled, at which time it was found to be heavily infested with termites. Well-established colonies of termites were also found in a nearby coal shed and in other buildings in the vicinity of the station.

Report was also made that the wood in the station at St. David, Ill., was infected with dry rot to such a degree that extensive repairs would soon be necessary. By this time, however, the officers of this road were beginning to be suspicious of reports of dry rot, and an examination of the structure disclosed an infestation similar to those at Alma, Table Rock and Galesburg.

It has long been recognized that termites, except dry-wood termites are usually associated with fungi, although they are often reported as working in sound wood. A comprehensive study was made recently by scientists, in connection with the work of the Termite Investigations Committee, to determine the relation between termites and fungi. While no conclusion was reached as to the significance of the association of termites and fungi, and no evidence was found of any specific relation between a given species of termite and any genus of fungus, termites were found to be capable of transporting fungous spores and hyphae. Fungi were isolated from every termite colony studied. The wood containing colonies of dry-wood termites showed little structural damage from the fungous attack, however, as might have been expected because of its low moisture content. On the other hand, wood containing colonies of subterranean termites usually showed distinct evidence of decay.

This is a feature that is emphasized particularly by the Burlington in connection with the inspection of structures that show evidence of decay. Such emphasis is especially important, as the Burlington found, where the local officers are not familiar with termites and have not been educated to a knowledge of the habits and methods of attack followed by termites. Not infrequently, reports are made of failure from decay, when as a matter of fact, termites are present and decay may be only a secondary or incidental cause of the failure.

In the belief that, although widely separated, the fore-

going might not be isolated cases of termite attack, it was determined to make a survey to discover whether there might be other points of infestation on the Burlington. As a result, several cases were added, but the reports showed a general lack of knowledge of termites and their habits. The whole subject was then presented to and discussed by the road's committee on timber preservation, since this committee acts as a clearing house for all matters relating to timber and its uses by the railway.

For some years, it has been the custom on the Burlington for the master carpenters of the road to hold a meeting annually at some central point on the system. This meeting was considered to afford an excellent opportunity for presenting information on termites to these division officers who are directly concerned with the maintenance of structures. Accordingly, arrangements were made for a talk by H. R. Duncan, superintendent of timber preservation, on termites and the damage they do to wood, and a presentation of a film prepared by the California Termite Investigations Committee.

In the light of the information thus presented, a further survey disclosed the presence of termite colonies in the stations at Holdrege, Neb., Wymore, Fairmount, Grafton, Plattsmouth, Sutton and Oxford, at Washington, Kan., and at Quincy, Ill., Canton, Lombardville and Metropolis; in the coaling plant and enginehouse at Hastings, Neb.; and in a company residence at West Burlington, Iowa. It was also developed that similar infestations had caused the complete or partial destruction of buildings on previous occasions, but because of lack of knowledge of termites and their habits, they had not been recognized and no preventive measures had been taken when renewals were made.

The discovery of these additions to the known infestations made it seem logical that some cases might have been overlooked. For this reason, as well as because it was appreciated that new colonies are established from time to time through swarming from existing colonies, the committee on timber preservation considered it advisable to institute a more thorough and continuing campaign of inspection, by means of which information would be available currently regarding new developments.

Campaign of Education Undertaken

At the same time, the committee recognized the importance of educating every employee who might be connected in a responsible way with the maintenance of structures, to a better knowledge of termites, their appearance and habits, the methods of destruction they pursue and the indications of their presence. As a preliminary to the accomplishment of these purposes, the committee requested the chief engineer to issue the following circular to all general and division superintendents:

The Committee on Timber Preservation has had brought to its attention the working of termites, or white ants, at various points on the system. We have already found a number of buildings that have been affected by them. The Committee desires to assemble all available information as to zones where termites are working and the buildings that have already sustained damage through their activities. It is also securing printed pamphlets on this subject, which will be distributed to master carpenters and carpenter gangs, so they can acquaint themselves more fully with the subject and be on the alert to discover any damage to structures as a result of infestation by this pest.

Will you undertake, therefore, to give me such information as you have on your division, as to zones where we are having trouble with termites and the structures that they are known to have damaged.

We have found cases where timber was reported to be rotten, when, in reality, it was being destroyed by termites. This indicates a lack of knowledge on the part of our forces with respect to this trouble, and we hope that, in addition to educating

the local forces, we may be able to develop ways and means of fighting this pest.

As the responses to this circular began to come in, it became evident that there is a definite area of heavy infestation of varying width, extending from Omaha, Neb., to McCook. Outside of this area, centers of infestation were reported at Denver, Colo., and several other points. Every report of damage was investigated, and in a few instances the reports were found to be in error, as it was definitely established that termites were not present.

Unsuspected Form of Destruction Discovered

Master carpenters were instructed to include bridges as well as buildings in their inspections and, if termites were found, to report immediately. As a result, not a few cases were reported of termite damage to untreated piles. In the interest of safety, each of these reports was investigated promptly, but in no instance were termites found. A new and unsuspected form of damage was uncovered, however, as many of the piles in question were found to be infested with wood borers of various kinds, or, in some instances, with carpenter ants. While none of these structures had been damaged seriously, and, therefore, the question of safety was not involved, it was considered quite probable that the potential service life of the piles had been shortened.

While termites are responsible for much the greater part of the destruction of wood in use, it was emphasized to the Burlington maintenance officers that these are not the only wood-eating insects. On the contrary, many varieties of beetles, carpenter ants, borers and wood-boring caterpillars are known, but it was pointed out that the evidences of their work are so distinctive that they should never be confused with termites. On the other hand, it was called to the attention of the local forces that while carpenter ants excavate runways quite similar to those made by termites, for which they are often mistaken, their runways are always kept open and free from refuse, as contrasted with termites, which commonly pack unused runways and galleries with refuse composed largely of woody feces. It is emphasized that if these characteristics are kept in mind, there should be little difficulty in distinguishing between the work of the two insects. Another pertinent fact to which attention is being called is that termites are usually more numerous in towns where there are large concentrations of their food, while carpenter ants rarely enter populous centers but generally remain at isolated places in the country.

As a part of its educational work, this road supplied information concerning powder-post beetles, of which there are three types, including the destructive death-watch beetle, which work in such a manner that their excavations are often mistaken for those of termites. It was pointed out that the insects themselves can be readily distinguished, however, and upon close examination their work will be found to possess characteristics that readily differentiate it from that of termites.

How to Detect the Presence of Termites

In conferences of Burlington officers, it was emphasized that attack by subterranean termites is impossible except through some contact with the ground, but that on the other hand, dry-wood termites enter structures above the ground, often through the roofs or at the eaves of buildings. A damaged place or nail hole in the weatherboarding affords an excellent opportunity for entrance. They are frequently found in crossarms or the tops of poles in telegraph and signal lines. As a guide in making inspections it was also pointed out that the presence of termites can be detected in four distinct ways: (1) By failure of the wood as a result of their attack;

(2) by emergency of the winged reproductive caste during the swarming period; (3) by the fecal pellets dropped from the workings of dry-wood termites; and (4) by the characteristic covered runways or tubes erected by subterranean termites to reach wood above the ground.

To insure that master carpenters will more readily detect the evidence of termite activity, they were informed that subterranean termites construct shelter tubes wherever they emerge from the ground, so that they are a certain indication that these insects have entered or are trying to enter the structure. Once seen, they will thereafter be readily identified. As a further guide, they were also informed that these tubes are sometimes constructed on the outside of foundation walls, but are more frequently found on the inner face of such walls, in basements, on the outside walls under porches and on interior water or drain pipes. In some cases, where entrance is gained at some distance from such support, these insects build tall, vertical, column-like tubes from the ground or basement floor in an endeavor to reach the wooden part of structures.

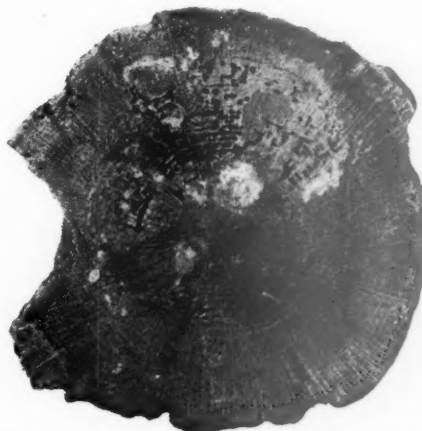
Methods of Prevention

Only in the instances that have been mentioned specifically did the Burlington find it necessary to renew the entire structures as a result of termite damage. In most of the remainder, partial renewals have been made and definite action taken to make the wood undesirable food for the infesting colonies. No standard procedure with respect to eliminating the colonies has yet been worked out, however, the action in each case being that which seemed best suited to local conditions.

Where complete or partial renewals have been made, treated timber has been used to replace the untreated material of the original structure. For the new freight house at Alma, the various members were treated by the Card process, with straight creosote or with zinc-meta-arsenite, the latter being employed for all boards and other lumber that required painting. All hidden timbers used in the new station at Table Rock were dipped in hot creosote.

When dealing with termites, emphasis was placed on the fact that the well-known ounce of prevention is worth many pounds of cure and that two fundamental principles are involved in devising methods of prevention. The first is to place all wooden parts so that they cannot be reached by the termites; this refers particularly to the subterranean type since it is obvious that this is not feasible in the case of dry-wood termites. The second is to use materials that are inedible, in other words, that have been given preservative treatment with a preservative that is poisonous to the insects.

Isolating the wood from the ground on solid, un-



Section of a Pile Partly Destroyed by Termites

broken foundations was set up as the most important measure for prevention. It is recognized this will not eliminate entirely the danger of attack, however, and that frequent and careful inspection by well-informed and competent men, who have been educated to a knowledge of the habits of these insects, and who are also thoroughly acquainted with building and carpenter work, becomes of paramount importance.

A recent inspection of the new freight house at Alma, in which it was sought to embody the foregoing principles, disclosed no signs of termites. It was found that, in general, the paint is adhering satisfactorily to the surface of the treated lumber. There were some areas on the exterior of the building, however, not exceeding about two per cent of the whole surface, particularly on coves and the moulded part of the drop siding, where the paint is peeling. It was not determined whether this is due to the preservative or some other cause. In several places faint staining indicates that creosote from the studding is working through the weatherboards.

The committee on timber preservation, which consists of the chief engineer, the engineer maintenance of way, the assistant purchasing agent, the superintendent of timber preservation and three timber inspectors, is continuing to study questions relating to termite distribution, particularly as it affects this road; new migrations into territory not heretofore infested; means of eliminating colonies that may have become established; and methods of preventing damage to structures by preventing the entrance of termites. It is also formulating and directing the educational program that is being carried on to insure that all interested employees will have up-to-date information concerning this new problem and will be equipped with the proper knowledge to enable them to detect the presence of this troublesome but elusive insect.

Wage Controversy Awaits President

WASHINGTON, D. C.

THE controversy between the railroads and their employees represented by the Railway Labor Executives' Association as to the basis of wages to prevail on the expiration of the present agreement for a 10 per cent deduction from basic wage rates, which expires on June 30, has been at a standstill for several days awaiting the return of President Roosevelt, who is away from Washington on a vacation trip.

Co-ordinator Eastman on March 30 issued a statement for the purpose of explaining the issues and giving the country an indication of the trend of the negotiations in which he, at the request of the President, had attempted to act as mediator since March 22. While he would not say that the present differences of opinion are irreconcilable, he said it was clear to him that "I cannot compose them as long as there is possibility of appeal to higher authority," and that "while I shall not abandon the role of mediator, it is probable that a settlement of the controversy will have to wait the return of the President." In the meantime, he added, he would be glad to consider any suggestions which either side may wish to proffer, but most of the members of the committees representing the railroads and the employees' organizations left Washington, the railroad managers' committee planning to report to a meeting of executives in Chicago on Thursday.

After outlining the history of the 10 per cent deduction

agreement, entered into on January 31, 1932, and since twice extended, Mr. Eastman gave an account of his negotiations, saying he had not undertaken to form an opinion upon the merits of the basic wage rates because this would require long study, and separate consideration of each class of railway employees. "What I have tried to do," he said, "is to bring about a temporary settlement of the controversy along the general lines indicated in the President's letters." The statement continued:

In this endeavor I have submitted various proposals which seemed to me to be consistent with the President's wishes, but none of these proposals has been acceptable to both sides. The labor representatives appear unwilling to entertain any proposal which would continue the 10 per cent deduction until the end of the year. On the other hand, the railroad representatives appear unwilling to entertain any proposal which would not so continue it, unless earnings and traffic reach a condition which in their opinion would justify restoration.

The arguments in support of the railroad position may be briefly summarized as follows: The conditions which led to the 10 per cent deduction still exist, for traffic is still considerably below the 1931 basis, which was itself subnormal and led to the proposal for a deduction. While traffic is improving, a large amount of deferred maintenance has accumulated, and the railroads face serious dangers ahead in the competition from other forms of traffic. It is essential to the welfare of the industry, including the welfare of its employees, that it should have a breathing space, as business revives, in which the properties can be restored to good condition and, if possible, some improvement in net earnings be shown. Increased maintenance expenditures will add to employment, and diversion of revenue to increased wages will greatly limit what can be done in this direction. The burden thus imposed upon the industry at this time will also make it harder to adjust the industry to the new competitive conditions. From both of these consequences the employees will suffer along with the industry.

It is also pointed out that the President's letters make it clear that the country is entering the critical period of its struggle toward recovery. If ground is lost in this period, all will suffer, and serious labor controversies will have a most disturbing influence. Such a period, the President's letters further suggest, would be an unfavorable time to try out the merits of wage rates, from the point of view of labor itself. It will be a more propitious time when the country is nearer recovery.

The arguments in support of labor's position may be briefly summarized as follows: The employees have suffered much more than the 10 per cent deduction, owing to demotions, part time and furloughs. There has been little increase in employment as traffic has revived, and the managements are constantly seeking new ways of saving labor, although railroad employment has been cut in half since 1920. The tendency of the times is toward higher prices and higher wages. The latter are necessary to increase the consumptive power of the population. This has been emphasized by the President in the N. R. A. program. Traffic is improving, business is recovering, and other industries all over the country are increasing their wages. The federal government is restoring the wages of its employees in large part. The railroad employees are in a state of serious unrest, and can no longer endure to be left out of this program. They must be given at least some share in the benefits of revival. The improvement in morale which would result would be of great advantage to the railroads themselves.

The labor representatives further suggest that the financial structures of the railroads are unsound, because of the disproportionate burden of fixed charges. If, therefore, an increase in wages should precipitate conditions which would compel the readjustment of these financial structures, such a result would conduce to sounder economic conditions in the industry and would help it to meet the new competitive conditions. In the meantime, the employees would be as well off under receivers or trustees as under present conditions, if not in a better situation, as they have learned from experience. They have also learned from experience not to rely upon assurances that increased earnings will be used to add to employment.

The above summaries are intended to indicate only in a very general way the position of the two sides.

The fact should be emphasized that there is no present prospect of a strike, and that if further effort at settlement fails, the controversy must proceed in accordance with the orderly procedure provided by the Railway Labor Act. In his letter of March 20, the President indicated that if no agreement is reached, and in default of arbitration, it might be necessary for him, "with due regard to the protection of the general public interest, to appoint a commission to examine thoroughly into the labor controversy, covering all classes of railroad employment, in order that the country may be fully advised of the merits."

Railway Inventories Reduced to \$295,000,000

Less capital tied up in stores material than at any time since 1915, but dead stock retards turnover

WHEN the unused materials on all railroads on January 1, 1934, including obsolete materials, retired equipment and scrap, are put together and priced at railroad values, the stock comes to approximately \$295,000,000, according to the records of 128 railroads, operating 240,570 miles of road, or 99.5 per cent of the mileage operated by the Class I roads of the country. In contrast with the inventories of mercantile firms, which increased by a considerable amount over the previous year as a result of physical increases in stocks and upward revisions of values to correspond to the

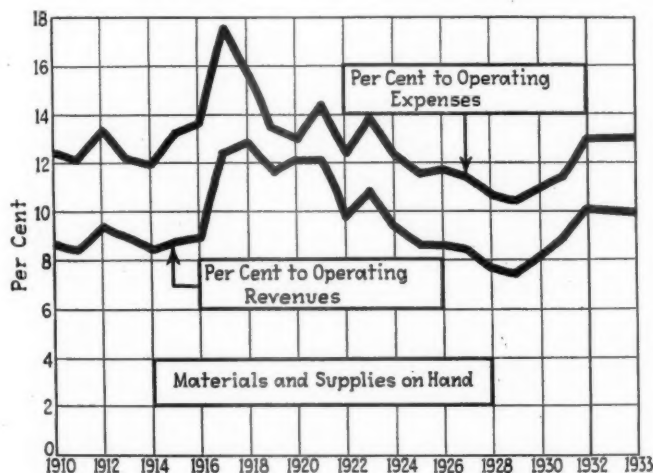
Table I—Materials and Supplies On Hand—United States Railroads

	Amount	Reduction	Per Cent of Op. Rev.	Per Cent of Op. Exp.
June 30, 1911.....	\$244,932,000		8.6	12.4
June 30, 1912.....	246,790,000	+\$1,858,000	8.5	12.1
June 30, 1913.....	300,601,000	+53,811,000	9.4	13.4
June 30, 1914.....	278,940,000	23,661,000	8.9	12.2
June 30, 1915.....	248,888,000	30,052,000	8.4	11.9
Dec. 31, 1916.....	333,361,000	+29,534,000	9.0	13.7
Dec. 31, 1917.....	514,051,000	+180,690,000	12.5	17.6
Dec. 31, 1918.....	641,759,000	+127,708,000	12.9	15.8
Dec. 31, 1919.....	608,527,000	33,232,000	11.6	13.5
Dec. 31, 1920.....	767,267,000	+158,740,000	12.1	12.9
Dec. 31, 1921.....	676,125,000	91,132,000	12.0	14.4
Dec. 31, 1922.....	556,260,000	119,865,000	9.7	12.3
Dec. 31, 1923.....	693,078,000	136,818,000	10.8	13.9
Dec. 31, 1924.....	569,690,000	123,388,000	9.4	12.3
Dec. 31, 1925.....	535,126,000	34,564,000	8.6	11.5
Dec. 31, 1926.....	561,007,000	+25,881,000	8.6	11.8
Dec. 31, 1927.....	532,063,000	28,944,000	8.5	11.4
Dec. 31, 1928.....	478,625,000	53,438,000	7.7	10.6
Dec. 31, 1929.....	477,051,000	1,574,000	7.5	10.4
Dec. 31, 1930.....	437,375,000	39,676,000	8.2	11.0
Dec. 31, 1931.....	379,992,000	57,373,000	8.9	11.5
Dec. 31, 1932.....	321,595,000	59,942,000	10.8	13.1
Dec. 31, 1933*.....	295,000,000	26,595,000	10.6	13.1

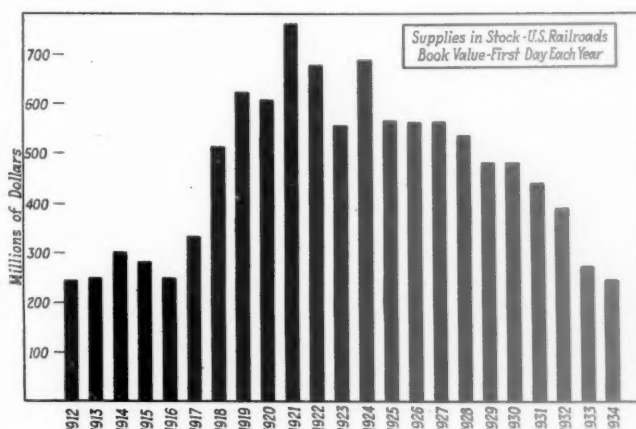
* Estimated.

higher prices under the codes, the railway inventories were below those of the previous year.

What this means as to physical quantities is somewhat indefinite because of fluctuations in prices last year, but, measured in dollars, the inventory in January was approximately \$26,598,000, or 8.5 per cent, under the corresponding figure in the year previous. It was \$86,-



Relation of Annual Inventories to Annual Railway Operating Revenues and Expenses



Total Book Value of Annual Inventories, 1912 to 1934, Unadjusted for Changes in Material Prices

537,000, or 22.8 per cent, less than the total at the beginning of 1932; \$143,900,000, or 32.8 per cent, below the corresponding figure for 1931; and \$182,051,000, or 38.2 per cent, below the corresponding value in 1930. With the exception of 1926, the annual reduction has been continuous since 1920, when total inventories, amounting to \$767,267,000, were at their highest in the history of railroads. The 1934 total is the lowest reported since 1915, when the gross inventory was \$248,888,000.

The sum on January 1 was 10.6 per cent of total operating expenses during the 12 months of 1933, as compared with 10.8 per cent the year previous and 8.9 per cent for 1932, 8.2 per cent for 1931, and 7.5 per cent for 1930. It was 13.1 per cent of the gross operating revenue in 1933, as compared with 13.1 per cent the year previous, 11.5 per cent for 1932, 11.0 per cent for 1931, and 10.4 per cent for 1930. The inventory on January 1, while smaller in the aggregate than in previous years, was larger by approximately 45 per cent, based on operating expenses, and 25 per cent, based on operating revenues, than in 1929.

The inventory on January 1 indicated a 5.8 months' supply, on the basis of the consumption in the previous year, as compared with 5.9 months' a year ago, 4.5 months' in 1932, 3.8 months' in 1931 and 3.4 months' in 1930.

Stores Stocks Increase

Based on subdivisions reported by 81 companies operating 200,041 miles of lines, approximately 6.15 per cent of the inventory, or \$18,160,000, on January 1, was fuel, as compared with approximately \$20,200,000 in the beginning of 1932. Approximately 11.75 per cent, or \$34,000,000, was new and second-hand rail, as compared with \$48,300,000 in 1933. The cross tie stock amounted to approximately \$51,500,000, or 17.5 per cent of the total, as compared with \$67,500,000 for 1933; and miscellaneous materials, consisting chiefly of storehouse

stocks, were approximately \$180,500,000, or 61.1 per cent of the total, as compared with \$170,200,000 the year previous. Unsold scrap iron amounted to approximately \$10,850,000, or 3.5 per cent of the total, as compared with \$12,900,000 in 1933. Although changes in prices must be taken into consideration in comparing the inventories with those in previous years, stocks in January, considering only book values, showed a 10-per cent re-

duction in fuel, a 30-per cent reduction in stored rail, a 23-per cent reduction in stored ties, a 20-per cent reduction in the scrap-iron account, and an increase of approximately \$10,000,000, or 6 per cent, in storehouse balances.

Book values of material consumed by the railroads include reconditioned material and material manufactured in company shops, as well as new material, and usually

Table II—Materials and Supplies Used

Road	Steam Fuel			Rail—New and Relay			Cross Ties		
	Used, 1933	On Hand, Dec. 31	Days' Stock	Used, 1933	On Hand, Dec. 31	Months' Stock	Used, 1933	On Hand, Dec. 31	Months' Stock
Akron, Canton & Youngstown.....	\$56,559	\$673	4	\$1,850	\$4,198	26	\$37,027	\$11,265	4
Alton.....	817,685	32,165	9	30,188	118,526	47	318,353	61,504	2
Ann Arbor.....	328,305	9,970	12	12,971	21,674	20	88,273	25,019	3
A. T. & S. F. Lines.....	8,341,309	2,541,217	11	2,699,068	2,434,838	11	1,900,154	5,138,220	32
Atlanta & West Point Lines ¹	172,526	12,667	50	9,238	69,302	91	82,685	215,399	32
Atlantic Coast Line.....	2,687,958	478,704	22	1,688,665	823,855	6	630,851	271,011	5
Char. & West. Carol.....	120,169	10,970	33	40,919	97,146	29	65,080	21,631	4
Baltimore & Ohio.....	5,283,384	298,290	20	3,355,607	1,197,003	4	2,846,886	2,033,312	9
Bangor & Aroostook.....	361,176	114,435	115	106,187	77,185	9	104,954	140,973	16
Boston & Albany.....	1,904,232	106,691	6	36,612	132,424	44	213,404	144,113	8
Boston & Maine.....	3,043,511	190,288	23	275,282	293,012	13	432,371	1,990,895	55
Burlington-Rock Island.....	43,256	7,287	61	1,155	533,582	..	4,101	69,336	201
Central of Georgia.....	797,062	46,202	21	65,503	174,433	32	93,919	108,924	14
Central of New Jersey.....	1,675,360	82,559	18	68,751	212,035	37	119,519	254,270	26
Central Vermont.....	502,241	114,563	10	16,731	113,728	84	183,970	99,379	5
Chesapeake & Ohio.....	.....	149,240*	..	.....	37,045	..	.....	410,263	..
Chicago & Eastern Illinois.....	745,527	18,326	9	53,971	33,571	8	154,547	116,357	9
Chicago & Illinois Midland.....	123,751	1,868	5	9,420	71,710	90	18,295	3,835	3
Chicago & North Western.....	4,187,461	281,180	2	774,951	974,906	15	1,277,552	1,381,924	13
Chicago, Burlington & Quincy.....	4,029,475	273,116	2	1,013,763	914,226	11	1,052,501	2,140,226	25
Chicago Great Western.....	1,285,608	23,867	7	253,385	57,969	3	54,019	21,183	1
Chi., Mil. St. P. & P.....	5,033,422	392,397	3	374,836	430,238	14	2,090,233	2,500,953	14
Chicago, R. I. & P. Lines.....	4,175,881	288,892	2	264,886	195,938	9	663,068	954,353	17
Chicago, St. P., Minn. & O.....	1,335,268	53,351	1	53,384	162,749	37	245,040	226,947	11
Clinchfield.....	149,106	4,660	11	16,633	113,837	86	124,076	73,510	70
Colorado & Southern.....	390,360	12,200	11	45,221	126,218	33	103,021	41,619	5
Columbus & Greenville.....	52,458	1,835	13	4,340	3,542	10	33,478	2,913	1
Delaware & Hudson.....	1,523,927	485,412	115	309,272	96,427	4	520,292	523,114	12
Del., Lack. & Western.....	3,702,168	153,357	15	501,916	148,353	4	192,372	147,069	9
Denver & Rio Grande Western.....	940,320	47,092	18	63,224	460,221	88	574,802	220,370	5
Detroit & Mackinac.....	50,977	5,946	42	5,721	10,387	22	24,750	23,277	11
Detroit & Toledo Shore Line.....	97,696	958	4	1,403	17,319	147	24,656	20,497	10
Detroit, Toledo & Ironton.....	164,049	805	2	11,012	80,901	88	77,901	30,813	5
Duluth, Missabe & Northern.....	520,625	185,605	130	45,673	98,868	26	65,957	324,446	60
Duluth, St. Shore & Atlantic.....	163,830	26,917	60	5,967	41,478	85	46,755	13,102	3
Elgin, Joliet & Eastern.....	430,647	35,778	30	28,589	92,205	38	147,352	69,075	6
Erie System ²	4,216,384	129,045	11	1,746,249	476,521	3	888,908	434,034	6
Florida East Coast.....	410,182	255,594	226	53,051	180,345	41	130,042	28,563	3
Fort Smith & Western.....	33,852	385	4	3,277	4,870	18	24,911	1,027	1
Fort Worth & Denver City.....	206,934	18,795	33	6,374	20,902	39	36,489	89,414	30
Georgia & Florida.....	86,692	7,823	32	11,131	11,816	13	52,837	4,030	1
Grand Trunk Western.....	1,266,422	66,157	19	364,435	293,161	10	367,110	48,402	2
Great Northern.....	4,503,893	728,033	59	138,370	667,764	58	390,831	1,129,169	34
Green Bay & Western.....	.....	.....	..	.....	.....	..	.....	.....	..
Gulf, Mobile & Northern.....	211,976	11,704	20	39,035	64,645	20	78,603	31,986	5
Illinois Central System ³	4,901,932*	158,823*	12	468,095	1,077,901	27	923,294	767,762	10
Kansas City Southern.....	.....	288,948	..	.....	64,180	..	.....	213,449	..
Lake Superior & Ishpeming.....	62,716	53,994	310	2,897	28,040	115	22,613	8,338	4
Lehigh & Hudson River.....	105,804	12,612	42	24,160	7,485	4	7,920	8,261	13
Lehigh & New England.....	.....	.....	..	.....	.....	..	.....	.....	..
Lehigh Valley.....	3,131,391	144,836	17	256,231	406,617	19	264,093	234,199	11
Louisiana & Arkansas.....	130,145	54,102	151	17,141	60,008	42	125,358	42,968	4
Louisiana, Arkansas & Texas.....	25,665	12,499	176	25,638	2,669	1	37,005	7,152	2
Louisville & Nashville.....	3,103,149	219,872	25	418,687	1,097,304	31	1,037,772	1,951,501	22
Maine Central.....	861,602	41,761	18	76,840	117,664	18	213,220	134,962	8
Minneapolis & St. Louis.....	563,176	48,152	31	36,851	86,260	28	148,499	83,047	7
Minn., St. P. & S. S. Marie.....	1,728,491	102,414	21	79,591	170,598	26	729,450	359,931	6
Missouri-Kansas-Texas Lines.....	1,220,998	500,087	149	211,237	110,418	6	487,998*	638,662*	16
Missouri Pacific.....	5,060,772	429,620	31	621,192	469,951	9	1,714,968	1,239,644	9
Gulf Coast Lines ⁴	373,699	131,300	128	26,313	254,687	118	102,465	137,302	16
Montour.....	55,061	784	5	21,872	5,166	3	13,406	979	9
Nashville, Chat. & St. Louis.....	708,568	128,001	67	126,542	179,966	17	386,593	260,504	8
Nevada Northern.....	37,043	5,395	53	564	9,404	204	15,383	20,820	16
New York Central System ⁵.....	.....	1,160,902	..	.....	2,347,904	..	.....	3,730,190	..
Norfolk & Western.....	.....	151,057	..	.....	689,988	..	.....	870,958	..
Norfolk Southern.....	250,620	21,942	32	4,953	19,653	48	163,552	13,389	1
Northern Pacific.....	3,819,495	264,626	25	190,040	805,582	50	969,462	1,070,672	13
Northwestern Pacific.....	205,707	28,132	50	6,923	72,681	125	18,449	16,115	10
Pennsylvania.....	13,334,691	891,711	24	1,805,528	2,188,811	14	2,350,600*	5,267,186*	27
Long Island.....	661,894	43,047	23	84,547	36,865	5	70,298*	18,056*	3
Pere Marquette.....	1,879,416	209,556	40	166,738	133,957	10	438,814	190,680	5
Pittsburg & Shawmut.....	32,185	1,815	20	9,111	20,735	27	23,930	3,093	2
Pittsburg, Shawmut & North.....	48,261	.....	..	8,596	9,925	14	37,646	2,513	1
Reading.....	2,009,143	166,910	30	76,667	718,674	114	158,817	707,027	53
Richmond, Fred. & Potomac.....	493,236	46,285	34	91,741	33,782	45	82,735	31,028	5
St. Louis-San Fran. Lines ⁶	2,614,902	169,272	24	554,114	44,010	10	2,398,940	627,456	3
St. Louis-Southwestern Lines.....	571,540	574,928	365	43,340	552,716	153	138,978	277,178	24
Seaboard Air Line.....	1,916,259	271,810	51	652,143	455,097	8	757,875	330,536	5
Southern System ⁷	4,607,024	211,004	16	395,040	619,214	19	1,996,996	728,248	4
Southern Pacific-Pacific Lines ⁸	10,532,693	1,276,947	44	1,207,553	1,648,297	16	721,652	1,008,371	17
Southern Pacific-Tex. & La. Lines.....	1,100,360*	291,240*	97	289,184	956,376	40	458,892	602,959	16
Union Pacific System.....	7,887,677*	787,550*	36	205,620	2,144,572	124	1,630,659	2,682,197	20
Utah.....	29,549	323	4	309	28,957	..	10,509	16,834	19
Virginian.....	420,921	13,473	11	114,272	84,809	9	195,341	171,501	10
Wabash.....	2,105,293	71,252	12	340,843	250,179	9	716,619	372,178	6
Western Maryland.....	555,191	65,661	43	161,889	69,343	5	298,580	114,825	5
Western Pacific.....	736,338	63,084	31	75,334	456,995	73	240,802	97,629	5
Wichita Falls & Southern.....	14,663	1,009	25	224	8,338	..	29,104	11,217	5
Wichita Valley.....	17,589	1,728	36	653	3,536	65	16,002	13,586	10
Total 83 Roads.....	\$144,088,484	\$15,075,355	37	\$23,507,479	\$27,601,270	14	\$37,028,406	\$41,447,964	13

*Locomotive

*All ties

¹ Includes W. of Ala. ² Includes Chic. & Erie, N. J. & N. Y., N. Y. S. & W. ³ Includes Y. & M. V. ⁴ Includes N. O. T. & M., St. L. B. & M., B. S. L. & G. ⁵ Includes C. N. O. & T. P., G. S. & F., N. O. & N. E., N. A. ⁶ Excludes \$2,689,255 fuel and supplies for steamship lines.

include more handling charges than book values of either materials in stock or purchases, and thus may not always be studied in the same category with stores and purchases. It is worthy of note, however, that during 1933 the book value of materials used on 77 roads amounted to \$457,520,176, of which 30.4 per cent, or \$139,163,670 was fuel; 5.08 per cent, or \$23,254,837 was new and second-hand rail; 7.97 per cent, or \$36,439,234 was

cross ties; and 56.65 per cent, or \$258,662,435 was store-house stock; while the corresponding consumption reported by the same roads in 1932 amounted to \$486,206,881, including \$148,000,000 of fuel, \$50,500,000 of new and second-hand rail, \$16,800,000 of cross ties, and \$279,000,000 of miscellaneous materials. It is evident from these figures that, despite the increased consumption of materials in the last half of 1933, the consumption for the

and Carried by Class I Railroads in 1933

Miscellaneous—Less Scrap												Road
Used, 1933	On Hand, Dec. 31	Months' Stock	Total Used, 1933	% Off 1932	Months' Stock On Hand	Scrap On Hand Dec. 31	Total On Hand Dec. 31	Decrease from Prev. Yr.	Per Cent Red.	Per Cent of Op. Exp. 1933	1932	
\$115,833	\$70,047	7.0	\$211,269	+5.0	4.9	\$943	\$87,399	\$771	0.9	8.5	8.2	A. C. & Y.
988,605	407,361	4.9	2,154,832	3.5	3.4	6,490	626,048	44,766	6.7	6.7	6.4	Alton
278,867	205,233	9.0	708,416	16.5	4.4	3,600*	265,650	110,739	29.6	11.1	14.1	Ann Arbor
12,940,926	6,291,769	6.0	25,881,459	11.0	7.6	516,699	16,922,745	1,948,761	10.3	18.0	18.6	A. T. & S. F.
249,995	330,835	16.0	514,444	+17.0	14.5	15,310	636,289	124,322	16.3	25.4	28.0	A. & W. P.
4,647,772	1,572,319	4.1	9,655,246	+4.0	3.9	46,873	3,192,762	1,910,405	37.8	11.7	15.8	A. C. L.
129,440	74,641	6.9	355,608	9.6	6.9	14,811	219,198	57,531	2.1	17.4	21.1	C. & W. C.
11,869,628	5,012,998	5.0	23,355,505	16.5	34.4	119,344	10,081,093	3,356,234	24.8	11.9	14.7	B. & O.
577,628	481,590	10.0	1,149,945	15.0	8.5	17,817	832,000	54,757	6.2	23.4	22.5	Bang. & Aroos.
1,644,941	1,007,444	7.3	3,799,189	7.5	4.4	17,784	1,408,456	+14,488	+10.3	10.5	9.5	B. & A.
4,581,399	2,477,676	6.4	8,332,563	11.2	7.1	15,662	4,967,533	378,775	7.1	16.1	16.2	B. & M.
24,664	107,263	54.0	73,178	11.0	11.7	4,609	722,081	51,746	0.2	8.9	8.5	B. R. I.
1,288,976	548,139	5.1	2,245,460	+8.5	4.6	75,973	1,408,456	+65,704	+7.4	9.2	8.5	C. of Ga.
2,390,131	1,183,775	5.9	4,253,762	8.2	4.9	26,247	1,758,889	207,653	10.5	8.9	8.9	C. of N. J.
542,210	301,222	6.6	1,245,154	+1.0	5.1	6,748	534,652	16,253	2.9	12.2	11.6	C. Vt.
1,224,339	389,214	3.8	2,178,384	6.0	3.1	231,361	4,211,169	310,107	6.9	7.3	8.1	C. & O.
347,134	204,966	7.1	498,600	+28.0	6.8	26,061	583,528	143,929	19.7	6.0	6.8	C. & E. I.
8,860,793	4,146,858	5.6	15,100,758	1.5	5.4	7,389	289,768	+60,932	+26.6	15.0	13.6	C. & I. M.
13,702,736	3,762,448	3.3	19,798,475	1.5	4.3	71,352	7,715,803	505,750	6.1	13.4	13.5	C. & N. W.
1,199,223	355,167	3.5	3,078,409	11.0	1.8	634,131	7,724,147	1,220,116	13.5	14.2	15.3	C. B. & O.
8,382,973	4,842,412	6.9	15,881,464	16.0	6.2	39,125	497,313	318,209	39.0	4.8	7.0	C. G. W.
6,305,831	3,924,877	7.5	11,409,666	3.5	5.6	492,127	8,658,127	828,172	8.7	13.4	13.1	C. M. St. P. & P.
1,427,754	564,778	4.8	3,061,446	22.5	3.9	168,299	5,532,360	663,818	10.7	10.5	10.9	C. R. I. & P.
390,226	253,036	7.9	680,041	+2.0	7.8	80,459	700,629	62,553	8.2	6.3	5.8	C. St. P. M. & O.
514,764	232,944	5.4	1,053,366	17.5	4.9	13,762	440,796	64,892	10.8	19.5	22.1	Clinchfield
109,948	108,430	12.0	200,224	13.5	7.0	1,514	118,234	145	0.1	16.5	14.4	C. & S.
3,035,515	1,456,058	3.4	5,389,006	11.0	5.7	70,668	2,631,679	304,813	10.4	12.9	13.2	C. & G.
5,688,308	1,252,350	2.6	10,084,764	+1.0	2.0	139,391	1,828,073	123,841	6.3	5.3	5.3	D. & H.
2,764,480	1,469,462	6.3	4,342,826	+10.0	6.1	7,846	2,204,991	379,312	14.6	18.5	20.4	D. L. & W.
57,306	112,049	24.0	138,756	10.5	13.0	573	152,235	15,428	9.2	30.0	27.5	D. & R. G. W.
101,106	65,468	7.9	224,861	+23.0	5.6	2,064	106,306	40,871	27.6	8.4	11.8	D. & M.
423,031	349,463	9.8	675,993	+36.0	8.2	3,994	465,976	68,885	12.9	19.1	17.5	D. T. & I.
896,257	387,986	5.2	1,528,512	+59.0	7.9	5,657	1,002,561	279,039	21.6	17.5	26.6	D. M. & N.
178,994	183,878	12.4	395,546	11.5	8.0	7,033	272,409	151,446	35.8	16.7	23.0	D. S. S. & A.
1,200,362	894,176	9.0	1,806,950	+36.5	7.2	42,031	1,133,265	27,739	2.4	15.0	16.2	E. J. & E.
7,413,170	1,915,770	3.1	14,264,711	5.5	2.5	724,026	3,679,398	+203,828	+6.0	6.7	5.8	Erie
721,380	1,124,417	18.9	1,314,656	+18.5	14.5	112,807	1,701,729	+149,197	+9.6	30.8	27.1	F. E. C. W.
39,913	153,626	4.6	101,949	...	19.0	887	160,798	+2,456	+1.5	27.0	23.8	F. S. & W.
287,369	265,614	11.0	537,166	47.8	8.8	17,643	412,368	54,723	11.7	12.3	12.8	F. W. & D. C.
156,157	62,401	4.8	306,819	+19.5	3.4	6,764	92,835	+30,769	+49.4	10.0	6.4	Ga. & Fla.
1,957,952	898,961	5.5	3,955,920	+26.0	4.0	111,603	1,418,287	315,732	18.1	10.4	12.6	G. T. W.
332,626	314,027	11.2	662,240	+18.5	7.6	9,362	6,166,906	125,254	20.0	14.7	14.1	G. N.
9,181,191	5,037,247	6.1	15,485,574	2.0	5.5	288,475	432,940	26,444	8.6	30.2	31.7	G. R. & W.
49,796	127,874	31.2	138,022	+53.5	19.0	26,851	7,441,798	266,104	3.5	12.0	11.5	G. M. & N.
88,646	53,708	7.3	226,530	17.0	4.3	4,508	1,285,025	144,692	10.0	18.7	...	I. C. Sys.
4,845,221	2,094,553	5.2	8,496,936	+7.5	4.1	47,493	2,927,698	+481,275	+19.5	9.7	7.8	K. C. S.
529,753	275,104	6.3	802,397	+24.5	6.5	2,439	434,021	126,176	22.5	16.1	19.5	L. S. & I.
94,460	87,913	11.0	182,769	+34.5	7.2	406	110,642	+9,429	+9.4	16.2	17.4	L. & H. R.
4,594,864	5,334,221	14.0	9,154,472	+4.0	11.3	700,402	9,303,300	38,832	0.4	18.4	18.0	L. & N. E.
1,047,451	821,092	9.2	2,199,113	10.7	6.1	48,665*	1,164,144	306,511	20.8	15.4	17.0	L. V.
870,420	481,924	6.7	1,618,947	2.5	5.1	...	699,385	109,605	13.5	10.3	10.8	M. & St. L.
1,647,110	1,277,504	9.3	4,184,642	11.5	5.5	40,723	1,951,170	795,883	28.8	10.8	13.8	Soo
3,254,988	1,363,454	5.0	5,175,222	+3.0	6.0	50,279†	2,662,803	330,998	11.0	14.0	15.6	M-K-T
7,599,648	3,869,004	6.2	14,996,580	+3.5	4.8	105,683	6,113,602	155,487	2.5	11.7	11.6	M. P.
1,672,527	475,717	3.4	2,175,006	11.5	5.6	1,079	999,008	+37,152	+3.9	18.0	15.4	G. C. Lines
195,497	127,309	8.0	285,836	+5.0	5.6	10,558	144,791	24,990	14.7	13.1	17.1	Montour
1,549,547	948,939	7.4	2,771,103	+17.0	6.6	...	1,517,412	+170,101	+12.6	14.0	12.8	N. C. & St. L.
34,156	63,322	22.0	87,147	23.5	11.5	609	102,574	+5,686	+5.9	37.0	29.1	N. Y.
23,505,298	...	...	...	...	...	874,422	32,375,002	+1,832,449	+6.0	15.0	12.8	N. Y. C. Sys.
3,205,974	...	...	...	...	...	68,842	4,909,572	189,302	4.0	12.6	12.5	N. & W.
282,027	189,956	8.0	701,153	...	4.2	2,518	247,461	1,253	0.5	6.9	6.5	N. S.
6,019,631	3,484,967	7.0	10,998,628	25.5	6.2	176,811	5,802,658	629,911	9.7	14.9	15.5	N. P.
287,212	169,251	7.0	518,291	8.0	6.6	6,610	292,789	251,363	46.0	11.8	17.8	Nw. P.
48,889,843	18,538,206	4.5	66,380,662	6.0	4.9	825,258	26,437,952	+24,019	+0.9	11.7	10.9	Penna.
1,565,326	693,765	5.4	2,382,065	24.5	4.0	20,545	778,482	32,544	40.2	5.1	4.4	L. I.
1,735,166	656,854	4.5	4,220,134	1.5	3.4	53,420	1,244,467	294,063	19.1	7.0	8.5	P. M.
90,382	80,078	10.3	155,608	20.0	8.2	12,703	118,424	+34,950	+42.0	21.0	12.5	P. & S.
4,240,026	3,411,431	9.7	7,484,655	16.5	8.1	3,160	98,468	27,978	22.2	11.9	14.0	P. S. & N.
558,804	643,496	13.8	1,226,516	...	7.3	238,279	5,240,837	59,502	11.1	15.6	13.4	Reading
5,589,307	2,698,019	5.8	11,157,265	+20.5	4.2	125,846	4,009,854	63,500	7.8	16.3	16.6	R. F. & P.
547,146	917,203	20.0	1,301,004	19.7	21.2	9,165	2,331,190	458,675	16.4	25.6	26.4	St. L. S. F. Lines
4,004,725	1,675,669	5.0	7,331,003	9.5	4.5	84,760	2,817,876	+324,910	+13.0	10.9	9.1	St. A. L.
6,549,885	3,511,988	6.5	13,548,945	17.0	4.5	291,221	5,361,675	160,463	2.9	8.0	7.2	Sou.
11,551,244	4,725,249	4.9	24,013,142	5.0	4.3	855,361	9,514,225	4,843,482	33.5	12.9	17.4	S. P.-P. Lines
4,318,025	2,065,645	5.7	6,166,461	13.5	7.6	88,649	4,004,869	567,977	12.3	16.7	16.7	S. P. T. & L. Lines
10,422,805	9,002,421	10.4	20,146,763	1.0	8.6	177,421	14,794,364	+937,008	+6.8	19.4	17.4	U. P. Sys.
67,484	136,798	24.0	107,851	+7.5	20.4	366	183,278	+354	+0.2	26.6	25.1	Utah
1,205,733	...	...	...	...	...	31,159	1,510,353	306,789	16.9	23.2	26.8	Virginian
2,943,635	1,083,565	4.2	6,106,390	3.5	3.5	37,163	1,820,273	1,222,950	40.1	7.1	9.8	Wabash
1,001,369	962,377	11.4	2,017,029	25.5	7.2	23,207	1,235,413	142,131	10.3	15.7	18.4	W. Md.
6,045,039	1,132,538	21.0	1,697,513	+1.0	12.4	37,888	1,788,134	111,878	5.8	20.2	21.0	W. P.
22,344	27,793	15.0	66,336	40.7	9.7	5,387	53,747	+9,045	+20.7	13.6	10.4	W. F. &

year, with the reduced prices under which most of the supplies were purchased, required a smaller expenditure than in 1932.

Reductions General

The capital tied up in materials and supplies at the beginning of the year was smaller on 90 of 127 roads and larger on 33 than at the beginning of 1933, the total reductions amounting to \$28,387,391, as compared with total increases of \$6,690,014. The reduction was \$1,948,761, or 10.3 per cent, on the Atchison, Topeka & Santa Fe; \$1,910,405, or 37.8 per cent, on the Atlantic Coast Line; \$3,356,234, or 24.8 per cent, on the Baltimore & Ohio; \$4,843,482, or 33.5 per cent, on the Pacific lines of the Southern Pacific; \$1,222,950, or 40.1 per cent, on the Wabash; and 25 per cent or more on the Ann Arbor, the Bessemer & Lake Erie, the Chicago Great Western, the Duluth, South Shore & Atlantic, the Midland Valley, the Minneapolis, St. Paul & Sault Ste.

Table III—Materials and Supplies Not in Table II

	Total on Hand Dec. 31	Decrease from Prev. Yr.	Per Cent Red.	Per Cent of Annual Op. Exp.	1933	1932
Atlanta, Birm. & Coast...	\$274,452	\$13,000	4.5	10.6	9.6	
Baltimore & Ohio Chi. Ter.	234,696	+1,194	+0.5	9.0		
Belt Railway of Chicago...	220,189	13,627	5.9	8.9	8.5	
Bessemer & Lake Erie...	610,275	219,839	26.0	12.7	17.9	
Chi., Ind. & Louis...	680,111	6,160	0.9	11.8	10.6	
Denver & Salt Lake...	245,549	342	0.2	27.5	25.1	
Detroit Terminal	116,088	13,166	10.1	21.6		
Duluth, Winn. & Pacific...	258,604	39,424	13.3	29.5	28.0	
Georgia	437,317	40,972	8.5	17.3	17.1	
Great Northern	6,166,906	125,254	20.0	14.7	14.1	
Green Bay & Western...	280,526	26,444	8.6	30.2	31.7	
Gulf & Ship Island...	25,787	2,101	7.6	2.8		
Illinois Terminal	314,736	79,443	20.0	9.8		
Lehigh & New England...	356,404	+14,634	+4.3	15.5	13.8	
Midland Valley Lines...	156,119	80,760	34.2	9.3	12.3	
Mississippi Central	74,910	6,864	8.4	13.5	13.7	
Missouri & North Ark.	139,911	10,692	7.1	19.7	17.8	
Missouri-Illinois	84,022	34,900	29.4	12.7	16.4	
International-Great North.	1,555,016	+399,242	+34.5	17.5	19.1	
Mobile & Ohio	694,371	+125,569	+22.0	10.1	8.1	
Monongahela	254,612	30,146	10.6	19.1	19.2	
Monongahela Connecting...	157,482	+1,813	+0.2	20.7		
New York, Chicago & St. L.	1,627,154	751,654	31.6	7.9	10.4	
New York, New Haven & H.	5,733,443	596,142	9.4	11.6	11.9	
New York, Ont. & Western	814,931	37,279	4.3	11.7	11.3	
Penn.-Read. Seashore	132,530	65,940	33.2	3.2		
Peoria & Pekin Union	134,854	+30,360	+29.0	18.6		
Pittsburgh & W. Va.	302,389	+199,931	+195.0	17.6	5.0	
Rutland	446,020	47,797	9.7	14.7	14.6	
San Diego & Ariz. Eastern	89,641	28,313	24.2	18.7	8.5	
New Orleans Terminal	35,018	4,955	12.4	6.9		
Spokane International	91,449	6,645	6.7	19.6	16.9	
Spokane, Port. & Seattle	355,664	3,056	0.9	12.5	10.1	
Staten Island Rapid Transit	91,988	45,475	33.0	6.9	9.8	
Tennessee Central	209,645	+22,064	+11.8	14.6	12.9	
Terminal Ass'n of St. L.	395,513	66,866	14.3	11.8		
Texas & Pacific	2,770,921	282,547	9.2	20.0	20.5	
Texas-Mexican	65,130	18,892	22.2	9.8		
Toledo, Peoria & Western	156,569	+39,608	+34.0	12.4	9.5	
Toledo Terminal	94,217	11,159	11.0	18.5		
Union of Pennsylvania	479,603	+56,838	+13.5	14.4		
Wheeling & Lake Erie...	737,997	+82,343	+12.6	9.2	10.1	

Marie, the Missouri-Illinois, the New York, Chicago & St. Louis, the Northwestern Pacific and the Long Island. There were increases of \$1,846,937, or 5.8 per cent, on the New York Central System; \$1,003,576, or 33.2 per cent, on the St. Louis-San Francisco; \$937,008, or 6.8 per cent, on the Union Pacific System; \$481,275, or 19.5 per cent, on the Lehigh Valley; \$203,828, or 6 per cent, on the Erie; and \$399,242, or 34.5 per cent, on the International-Great Northern.

Further details regarding the inventories and also the consumption of materials are contained in Tables II, III and IV; Table II giving the amount of fuel, rail, cross ties, miscellaneous materials and scrap, Table III giving the total inventories of the road for which classified figures are not available, and Table IV reporting the quantities of material used during 1933 and on hand at the beginning of 1934 on representative railroads. Corresponding figures for the previous year were published in the *Railway Age* of April 15, 1932.

The total inventories in Tables II and III correspond to the General Balance Sheet Account 716—Materials and Supplies, as contained in the carriers' annual reports

of income and assets to stockholders and regulatory bodies, and are thus official, while the subdivisions of the inventory and also the consumption figures were compiled from special reports received by the *Railway Age* from the same sources, certifying to the annual inventory. In the few instances where discrepancies occur between the totals reported to the *Railway Age* and those reported to the Interstate Commerce Commission, the latter figures were used. The statistics expressing inventories in terms of days' or months' supply of stocks were compiled by dividing the reported consumption by the number of days or months in a year to obtain the theoretical average consumption and by dividing the remainder into the reported inventories.

While the method of reporting annual inventories is governed by rules prescribed by the Interstate Commerce Commission, complete uniformity is prevented by differences in the way the rules are interpreted by different roads, particularly in accounting for fuel on hand, the unapplied materials in the custody of users, and also because of different values placed by different roads upon second-hand material, retired equipment and scrap, and the practice of handling new materials received but not paid for. To secure the greatest possible uniformity, the inventory figures were gathered from each road to include, unless otherwise noted, all new, second-hand, shop-made and otherwise usable material, machinery and equipment available and unapplied, including ties at treating plants, line stocks, working stocks and supplies for A. F. E. projects and new construction; also materials received but not paid for, while materials reported as used are considered to include the book value of all materials, less ballast, scrap and stores expense, issued to close accounts for construction as well as maintenance; and scrap and retired equipment in stock or sold should be reported separately. The figures are published as reported, except where consolidations were made to conform to those recognized by the railroads in reporting to the Interstate Commerce Commission.

Operating Ratios Slip

Attempts by railroads to compare their inventories has led to the adoption of various measures, the most common of which are the book value of inventories per mile of road, the ratio to operating expenses and the rate of turnover. The *Railway Age* has expressed total inventories on the basis of their relation to operating expenses since its detailed surveys of inventories were begun in 1926. This basis of measurement has not been uniformly approved, especially among supply forces who consider the rate of stock turnover to be the only fair basis of comparing store-department efficiency. While this measure of inventory, similar to other indexes common to railway operation, not excepting the ratio of operating expenses to operating revenues, is not ideal, it can be developed for all roads from official figures and has other advantages which encourage its continued use, especially since the decreased consumption of materials has seriously undermined the popularity of the rate of turnover with its former advocates.

The tables show that the ratio of gross inventories to operating expenses was lower than in the previous year on 30 of 127 railroads and higher on the others, while there were 33 roads whose inventories on January 1 were lower than the average for all the railroads. Disregarding whether the smaller inventories by this measure are or are not explained by the practice of relieving inventories of material before the material is used, as well as by special operating and purchasing conditions, the ratio was 4.5 on the Atlanta, Birmingham & Coast, 7.3 on the Chesapeake & Ohio, 6.0 on the Chicago & Eastern Illinois, 4.8 on the Chicago Great Western, 6.3 on the

Chicago, St. Paul, Minneapolis & Omaha, 5.3 on the Delaware, Lackawanna & Western, 6.7 on the Erie, 7.9 on the New York, Chicago & St. Louis, 7.0 on the Pere Marquette, 8.0 on the Southern and 7.1 on the Wabash.

Inactive Stock

To facilitate comparisons and afford a more complete picture of supply conditions on each road, the *Railway Age* has again subdivided the stock into classes which are handled by different forces or subject to different policies of stock control and has expressed the value in terms of the average rate of turnover. While the stock of fuel on January 1 indicates that a few roads are operating with less than a week's supply, over 35 roads reported more than a month's supply, with the total fuel inventory on January 1 representing a 37-day supply of fuel, as compared with 40 days on January 1, 1933, 31 days on January 1, 1932, and 32 days on January 1, 1930. The large stock of some roads is the result of storing fuel oil.

Counting relay rail as well as new rail, inventories on January 1, measured by the consumption in the previous 12 months, ranged from a four months' supply to more than a year's supply in some cases, while the aggregate inventory was equivalent, on this basis, to a 14.2 months' supply, as compared with 18.0 months' at the beginning of 1933, 9.5 months' at the beginning of 1932, 4.9 months' at the beginning of 1931 and 3.9 months at the beginning of 1930. The book value of stored rail amounted to \$2,434,838 on the A. T. & S. F., \$1,197,003 on the B. & O., \$1,077,901 on the I. C., \$1,097,304 on the L. & N., \$2,347,904 on the N. Y. C. System, \$2,188,811 on the Penna., \$1,648,297 on the Pacific lines of the S. P., and \$2,144,572 on the U. P. While these stocks appear to be large, and in many cases, have been increased somewhat by the purchase of new rail since October, they include second-hand rail and would be quickly depleted with any resumption of back work comparable to that customary prior to 1929.

It is usual to carry sufficient cross ties for one year's requirements in order to obtain proper seasoning. While sufficient ties were reported at the beginning of the year to last several years on the basis of the consumption of ties during 1933, the aggregate value is unusually large in only a few instances. The inventory of 46 roads represented considerably less than a year's supply of ties on the basis of the consumption in 1933. The gross inventories at the beginning of the year showed 13.4 months' supply, as compared with 14.8 months' supply at the beginning of 1933, 11.8 months' supply at the beginning of 1932, 10.9 months' supply at the beginning of 1931 and 8.1 months' at the beginning of 1930.

Storehouse Stocks

Stocks of miscellaneous materials, chiefly supplies handled by stores departments, were larger in January, both in the aggregate and in proportion to the consumption, than a year ago, reflecting the effects of increased costs for recently purchased materials; also some buying ahead to avoid higher prices, and the necessity of replenishing stocks of repair parts without any resumption of demand for quantities of inactive material in stock or sufficient improvement in earnings to persuade the railroads to charge off accumulations of obsolete items. The standard for storehouse operation is a 90-day protection. On January 1, the protection, based on the book value of consumption for the 12 months of 1933, ranged, on different roads, from 2.6 months' supply to more than 12 months, and averaged 5.7 months. The average was 5.5 months for the previous year, 4.4 months for January 1, 1932, 3.8 months on January 1, 1931, and 3.9 on Jan-

uary 1, 1930. If the protection were measured on the basis of the last three months of 1933 or even the last six months of 1933, the comparison would be much more favorable.

Railroad Scrap

An effort has been made to report railroad scrap and the salvaged value of retired equipment separately from

Table IV—Approximate Quantities of Material in Stock,
December 31, 1933

	Fuel (Tons)	Rail— New & S. H. (Tons)	Cross Ties (Number)	Scrap (Tons)
Akron, Canton & Youngstown.....	269	125	9,387	110
Alton.....	18,070	5,844	62,289	
A. T. & S. F. Lines.....	806,993	114,311	3,789,608	
Atlanta & West Point Lines.....	5,461	2,843	154,055	1,359
Baltimore & Ohio.....	190,696			
Bangor & Arrostook.....	23,522	3,547	225,924	
Boston & Albany.....	25,187	6,211	139,431	3,701
Boston & Maine.....	46,529	11,260	1,141,735	3,915
Burlington-Rock Island.....	470,042		86,130	
Central of Georgia.....	21,199	8,174	178,898	
Central of New Jersey.....	32,986	5,968	236,927	3,096
Central Vermont.....	3,482	2,913	68,040	1,214
Chesapeake & Ohio.....	149,240	37,045	410,263	27,411
Chicago & Eastern Illinois.....	9,640	1,189	144,589	1,168
Chicago & Illinois Midland.....	1,067	1,905	3,406	800
Chicago & North Western.....	182,084			
Chicago Great Western.....	14,711	2,182	21,366	5,281
Chic. St. P. Minn. & O.....	18,418	6,246	323,781	
Clinchfield.....	3,794	4,455	80,357	8,764
Colorado & Southern.....	12,200	4,136	36,533	2,362
Columbus & Greenville.....	789	232	3,679	139
Delaware & Hudson.....	148,535	3,905	258,549	9,079
Del. Lack. & Western.....	52,319	6,856	137,970	11,810
Denver & Rio Grande Western.....	23,992	15,860	380,338	1,761
Detroit & Mackinac.....	1,725	371	37,358	81
Detroit & Toledo Shore Line.....	296	742	12,891	363
Detroit, Toledo & Ironton.....	329	2,976	38,524	813
Duluth, Missabe & Northern.....	48,252	2,589	189,467	890
Duluth, S. S. & Atlantic.....	7,043	1,327	28,283	
Elgin, Joliet & Eastern.....	20,616	2,771	50,663	
Erie System.....	73,024 ³	14,306	472,802	56,599
Florida East Coast.....	309,884	6,199	41,488	17,942
Fort Smith & Western.....	141			
Fort Worth & Denver City.....	18,892	458	108,048	5,401
Georgia & Florida.....	2,672	615	7,575	1,322
Grand Trunk Western.....	29,131	11,486	40,547	13,684
Great Northern.....	189,735			
	225,298 ²			
Gulf Coast Lines.....	12,455,478 ¹	7,726	130,764	
Gulf, Mobile & Northern.....	5,856	4,608	78,214	
Illinois Central System.....	101,298	43,430	747,094	
Lake Superior & Ishpeming.....	14,068	823	13,451	492
Lehigh Valley.....	46,512 ³	13,360	206,947	6,783
Long Island.....		1,913	10,962	
Louisiana & Arkansas.....	50,849	2,736	69,059	375
Louisiana, Ark. & Texas.....	1,497,513 ¹	149	19,731	258
Louisville & Nashville.....	145,803	49,792	1,546,132	
Maine Central.....	10,413	4,490	170,157	5,498
Minneapolis & St. Louis.....	16,033	3,400	103,342	
Minn., St. P. & S. S. M.....	30,493	8,341	432,724	
Montour.....	470	273	560	1,025
Nevada Northern.....	1,201	196	29,038	
Norfolk Southern.....	7,190	818	22,006	503
Northern Pacific.....	118,880	27,779	995,918	
Northwestern Pacific.....		4,956	32,966	932
Pennsylvania.....		76,932	2,363,261	
Pere Marquette.....	61,494	4,706	150,803	
Pittsburg & Shawmut.....	1,448	860	1,849	1,273
Pittsburg, Shawmut & Northern.....				
Reading.....	55,854			
Rich., Fred. & Potomac.....	19,971	1,369	49,879	
St. Louis Southwestern.....	220,333	1,602,774 ³	234,134	898
Seaboard Air Line.....	143,281	24,719	506,141	18,835
	80,601 ¹			
Southern System.....	137,746	27,520	659,863	30,025
S. P. — Pac. Lines.....		91,507	1,134,643	145,859
S. P. — Tex. & La. Lines.....	184,436	34,669	804,728	
Union Pacific System.....	315,023	77,488	2,574,001	28,637
Utah.....	294	1,208	9,477	150
Virginian.....	8,542	2,993	166,236	
Western Maryland.....	40,739	3,152	127,300	1,827
Western Pacific.....	23,040	14,029	168,649	5,220
Wichita Valley.....	1,061	111	18,192	53
Comparative totals, Dec. 31, 1933.....	3,435,603	571,665	19,288,980	256,961
Dec. 31, 1932.....	3,179,094	718,011	24,813,989	275,964

¹ Gal.

² Bbl.

³ Lin. ft.

other material, to prevent the inclusion of these values with stores stock, from producing misleading comparisons and also because they comprise materials, which, while frequently reconverted in part into usable materials, are not materials immediately serviceable for repair work. There is less uniformity in scrap accounting than with other materials, and the reports from different roads are, therefore, less comparable. The figures for January, 1934, are especially interesting, however, because they show a reduction in book value, notwithstanding the higher values at which the scrap can now be carried in stock. The

inventory of 80 roads amounted to \$8,091,224 on January 1, compared with \$10,279,084 the year previous.

Physical Inventories

With the co-operation of the railroads, it has again been possible to report approximate quantities of coal, rail, cross ties and scrap iron, included in the inventories on January 1, and to supplement them with the corresponding quantities of material used during 1933. The figures show more effectively than book values the extensive depreciation of stocks for program work, with most of the roads for which figures are available, reporting less than 5,000 tons of rail, including second-hand rail, and with only 16 of 31 roads reporting over 100,000 cross ties in stock, while the tonnage of unsold scrap was considerably less than the corresponding roads reported the year previous. On 31 roads for which comparable figures are available, the tonnage on hand was 257,219 on January 1, 1933, and 306,261 on January 1, 1932, a reduction of 16 per cent.

Erie Had Net Income in 1933

THE Erie last year, with operating revenues totaling \$72,086,315, or 2.3 per cent less than in 1932, had net income of \$531,528, as compared with an income deficit of \$3,142,997 in 1932. Revenue from merchandise traffic (i.e., all freight traffic excepting coal) increased almost 2 per cent over 1932, but coal traffic revenue declined 4.3 per cent and passenger revenue 12.1 per cent. Particularly noticeable was the reduction of more than 25 per cent in revenue from the handling of milk. Since the volume of this traffic is relatively stable,

Table I—Erie, Revenues and Expenses—A Comparison

	1933	1932	+Inc. or -Dec. %	1929
Merchandise Revenue	45,042,110	44,294,809	+1.7	79,935,178
Coal Revenue	15,966,615	16,683,969	-4.3	26,987,064
Passenger Revenue	5,475,016	6,228,840	-12.1	11,065,777
Milk Revenue	1,632,920	2,202,854	-25.9	2,418,079
Total Operating Revenue	72,086,315	73,746,074	-2.3	129,230,437
Maintenance of Way Expenses	6,577,993	8,186,343	-19.7	15,130,938
Maintenance of Equipment Expenses	14,706,539	15,222,433	-3.4	27,979,062
Transportation Expenses	25,173,897	26,851,173	-6.3	47,148,049
Total Operating Expenses	51,612,532	55,847,813	-7.6	97,630,916
Net Operating Revenue	20,473,783	17,898,261	+14.4	31,599,521
Taxes	3,945,986	4,789,291	-17.6	5,627,391
Operating Income	16,492,306	13,088,392	+26.0	25,926,125
Net Railway Operating Income	12,523,147	8,830,345	+41.8	21,462,037
Non-operating Income	4,196,774	4,274,438	-1.8	4,708,541
Gross Income	16,719,922	13,104,784	+27.6	26,170,579
Deductions from Gross Income	16,188,393	16,247,781	-3.6	14,492,869
Net Income	531,528	-3,142,997		11,677,709
Percent of Operating Revenues				
Maintenance of Way Expenses	9.13	11.10	-17.7	11.71
Maintenance of Equipment Expenses	20.40	20.64	-1.1	21.65
Transportation Expenses	34.92	36.41	-4.1	36.48
Operating Expenses	71.60	75.73	-5.5	75.55
Net Railway Operating Income	17.37	11.97	+45.1	16.61

the decline is undoubtedly to be accounted for almost entirely by the diversion of the business to trucks. The states of New York and New Jersey, where most of this business moves, do not regulate truck traffic, and permit the operation of vehicles of much greater length and weight than is the practice in most states. Moreover, the fees levied by these two states for commercial use of the highways are the lowest in the union. With such public favors shown to truck traffic, naturally it has flourished.

Important items of revenue and expense for last year, as compared with 1932 and 1929, are shown in Table I.

Comparing the latter year with 1933, it will be seen that the company has been relatively fortunate in maintaining its gross revenues, the decline in freight revenue being 43 per cent and that in total operating revenue slightly over 44 per cent. The decline in maintenance of way expense from 1929 was 57 per cent, in maintenance of equipment expense 47½ per cent, in transportation expense 46½ per cent and in total operating expenses 47 per cent. The ratios of the various items of operating expense to total operating revenue, also shown in the table, are of interest, a particularly significant comparison being afforded by the figures for the transportation

Table II—Erie, Comparative Freight Service Operating Statistics

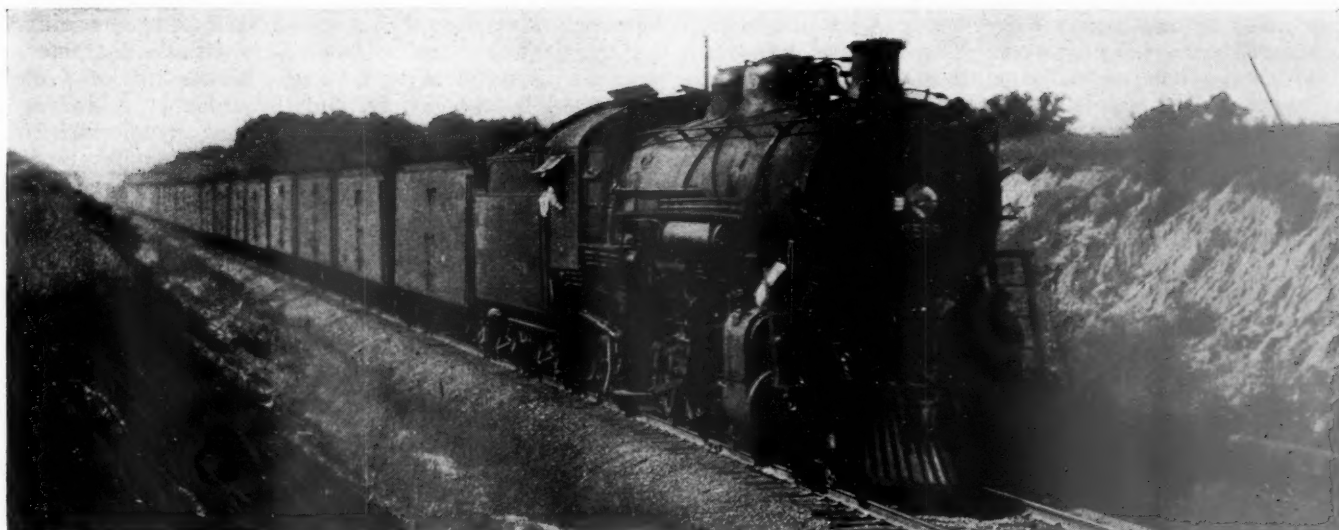
	1933	1932	+Inc. or -Dec. %	1929
Train-Miles (Thousands)	7,554	7,540	+0.2	10,915
Road Locomotive-Miles (Thousands)	8,476	8,457	+0.2	12,653
Freight Car-Miles (Thousands)	489,641	500,289	-2.1	756,800
Gross Ton-Miles	18,715,478	18,803,719	-0.4	28,677,591
Net Ton-Miles	6,913,745	6,812,120	+1.5	11,709,137
Train-Hours	477,689	485,503	-1.6	842,830
Average Cars per Train	65.9	67.4	-2.2	70.4
Average Gross Tons per Train	2,478	2,494	-0.7	2,627
Average Net Tons per Train	915	903	+1.4	1,073
Average Net Tons per Loaded Car	23.0	22.5	+2.3	24.4
Percent Loaded to Total	61.5	60.5	+1.7	63.5
Average Train Car-Miles Speed (M.P.H.)	15.8	15.5	+2.0	12.9
Gross Ton-Miles per Train-Hour	39,179	38,730	+1.2	34,025
Net Ton-Miles per Train-Hour	14,473	14,031	+3.2	13,893
Lb. Coal per 1000 Gross Ton-Miles	101	103	-1.9	112
Miles per Car per Day	29.3	29.0	+1.0	40.8
Miles per Locomotive per Day	46.7	46.7		69.5
Percent Freight Cars Unserviceable	5.6	4.7	+19.2	4.4
Percent Locomotives Unserviceable	39.0	30.1	+29.6	19.7

ratio, which stood at 36.48 in 1929 and which had declined to 34.92 last year.

Table II gives comparisons of selected freight service operating statistics for the years 1933, 1932 and 1929. The increase last year over 1932 in net ton-miles, even though slight, is significant in that it was accomplished with a decrease in gross ton-miles and in car-miles, and is probably to be explained by the increase in net tons per car and per train, and the decline in the ratio of empty car movement to total. It is likewise to be noted that both gross and net ton-miles per train hour increased, not only over 1932 but over 1929 as well, and the marked improvement in fuel efficiency is particularly noticeable in view of the great increase in train speed (as compared with 1929), combined with lighter loading per car and per train and an increase in the ratio of empty car movement to total.

The company, it will be noted, has a large percentage of its motive power out of service awaiting repair, but the percentage of bad order freight equipment is not of particularly high proportions and will be considerably reduced by the addition of some 3,800 new freight cars which the road is acquiring by means of a P.W.A. loan. It is also acquiring a considerable number of all-steel passenger cars which will go far toward completing the modernization of its passenger equipment.

The Erie at the end of the past year had loans from the Reconstruction Finance Corporation totaling \$13,400,810, from the Railroad Credit Corporation \$3,800,285 and bank loans totaling \$2,575,000. It has, however, no early maturities of funded debt to meet for the Erie Railroad proper, although bond issues of three of its subsidiary companies, totaling over \$15,000,000, come due in 1935. In view of these obligations which, to be sure, are not oppressive, it is nevertheless reassuring to note that the company was able last year to convert a deficit into net income, and that net railway operating income this year is running far ahead of last.



Locomotive Performance is Improved and Delays Reduced by Systematic Blowing

Illinois Central Improves Method of Handling Boiler Water

Effects a saving of over \$230,000 a year by systematic blowing on the road, based on hydrometer tests made after each trip

By E. Von Bergen*

DURING the past three years, the Illinois Central has completed equipping all of its serviceable steam locomotives with mufflers and blow-off cocks operated from the cab, and installed hydrometer water-testing facilities at 56 terminals, thus providing the mechanical equipment necessary to effect a notable improvement in locomotive boiler water conditions. By systematic blowing on the road, based on hydrometer tests made at the conclusion of each engineman's run, boiler water has been kept within desired concentration limits and foaming prevented, in spite of a reduction from 1930 to 1933 of 81.8 per cent in the number of water changes, and 84.8 per cent in the cost of these two items per 1,000 locomotive-miles. The net reduction in cost, based on 1933 mileage, amounts to over \$230,000 per annum, as shown in the table, and is exclusive of such other important, but largely indeterminate advantages as improved locomotive performance, increased availability, reduced maintenance, etc.

The Illinois Central has devoted a great deal of attention for many years to the treatment of water for use in locomotive boilers by building and operating water treating plants and by subjecting water supplies to "internal" water treatment, by which the addition of various types of compounds causes chemical reactions which are not completed until after the water is heated in the boilers.

This practice was extended in 1930 by the application

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of feeder treatment, provided by the Dearborn Chemical Company, Chicago, on lines in Louisiana and West Tennessee, Indiana and Central and Southern Illinois. Because, with this type of treatment, the chemical reaction is not completed until after the water is heated in the boilers, questions were raised as to the amount of blowing necessary to remove the substantial amount of sludge deposited in the boilers. This gave rise to a thorough study of blowing practice on the Illinois Central, which led to the conclusion that no system of water treatment could be fully efficient and economical if frequent washing of boilers were indulged in. This applies more particularly to internal treatment, as the heavy concentrations built up in the boilers, and which prevent scaling and corrosion, are constantly being dumped out when boilers are washed. It thus becomes obvious that boilers must be blown systematically and in correct amounts, if the economies sought are to be accomplished, the blowing being a basic and indispensable part of the entire plan of treatment.

Locomotives Equipped for Convenient Blowing on the Road

The next step was to equip the locomotives so that they could be blown at any time and place desired. A program of equipping each locomotive with a blow-off muffler and blow-off cock operating rigging so arranged that enginemen and firemen could operate them without leaving their seats, or taking their eyes from the track ahead, was begun in the spring of 1931 and completed by the end of the year. Service tests had shown that locomotives could be operated under the most severe

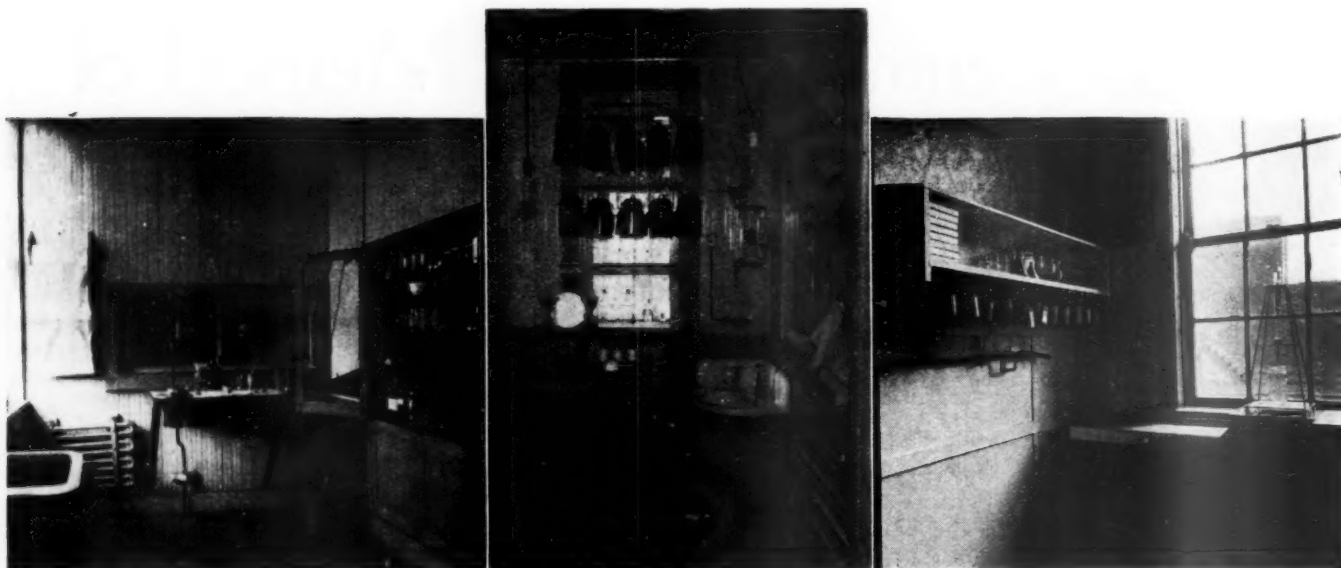
conditions without the boilers foaming, when the boiler water contained 120 grains per gallon of total dissolved solids, and under normal conditions when it contained as much as 150 grains per gallon. A Dearborn concentration hydrometer was furnished at each terminal enginehouse, and hydrometer tests of samples of water, taken from the boilers on arrival, were made from time to time.

Based on these and special checks made with hydrometers, instructions were issued to engine crews to open each blow-off cock at least three times, and five seconds each time, during each 20 miles run, and to increase this amount of blowing, if necessary, to prevent foaming. At some terminals, one full glass, and at others, two, according to the characteristics of the water used, were blown on arrival at the cinder pit, and again before departure. This practice made it practicable to operate all locomotives from monthly inspection to monthly inspection without any boiler washing or water changing, but there was a serious drawback in the plan which prevented it from being a complete success. No one knew the condition of the water in the boilers as re-

dissolved solids in the boilers of locomotives arriving.

Since the total dissolved solids vary with the characteristics of the water taken en route, the amount of work performed by the boilers, and the amount of blowing by engine crews, it was obvious that any attempt to stipulate a certain amount of blowing at terminals would, if sufficient to prevent foaming, certainly result in excessive waste of heated water. These tests also showed that the labor cost of taking a sample from each boiler, testing it with a hydrometer and blowing the amounts necessary as shown by the tests would be more than paid for, in savings in heated water, as compared with blowing arbitrary amounts.

In the absence of systematic hydrometer tests, any of the several engine crews operating a locomotive, or the terminal forces, could neglect blowing, eventually resulting in foaming, and it was impossible to fix responsibility. It was, therefore, decided to install a small hydrometer water-testing laboratory at enginehouses wherever locomotives lay over, take a sample of water from the boiler of each locomotive arriving, test it and blow the number of glasses indicated by the hydrometer,



Typical Water Testing Laboratory Arrangements—(Left) East St. Louis Shops, (Center) Twenty-Seventh Street (Chicago) Shops, (Right) Markham Shops

gards the concentration of foaming salts when locomotives arrived at or left the initial or intermediate terminals. Consequently, cases of foaming occurred too frequently, with resulting damage to superheater units, main valves and cylinder parts.

An improved hydrometer of the same make was developed, as described on page 900 of the *Railway Age* issue of May 28, 1932, being designed to permit testing water samples at anywhere from 60 to 120 deg. F., instead of at only 100 deg. F., as with the old type. This reduced the time required to make a test to an average of only three minutes, and also provided greater accuracy, as the operator could check a reading as many times as he desired. A test was made with one of these new instruments at one of the larger terminals over a period of four days and nights by testing a sample of water from the boiler of every locomotive arriving and departing, and it was proved that the practice of blowing a stipulated amount from each boiler at the terminal resulted in blowing away 94 glasses of water unnecessarily, and at the same time five locomotives were dispatched with boilers in a foaming condition. This was on account of the wide range in accumulation of total

in order to bring the total dissolved solids below 100 grains per gal. Samples of water are also taken at every point where engine crews are changed on extended runs.

Water-Testing Laboratories Installed at 56 Terminals

A total of 56 water-testing laboratories were installed; three typical installations are illustrated. Laborers collect the samples, make the tests, and blow the boilers at terminals. Engine crews are required to operate blow-off cocks en route sufficiently to bring locomotives to the final terminal with the total dissolved solids not exceeding 150 grains per gallon. A daily report on a designated form is sent to the division superintendent, master mechanic, traveling engineer and general air-brake engineer, covering all hydrometer tests made at each laboratory, and a copy is posted on enginemen's bulletin boards. This enables enginemen to determine if it is necessary to increase or decrease the amount of blowing on succeeding trips. This report also enables officers immediately and definitely to fix responsibility for failure to blow boilers properly.

The year 1930 was the last year during which frequent boiler washing and water changing was practiced. The

total number of boiler washings in 1930 was 87,209 and, in 1933, this number was reduced to 15,889. In the same period, the total number of water changes was reduced from 43,917 to 93, and the average cost per 1,000 locomotive-miles was reduced from \$11.35 to \$1.71, as shown in the table. Making due allowance for the cost of the water blown and the cost of making the hydrometer tests, a net saving of \$232,631 is shown.

With this system, every locomotive is dispatched from the initial terminal with the boiler water in first-class condition, as far as the foaming tendency is concerned. Samples are drawn from the bottom gage cock immediately after arrival. A blowing chart is provided for use in connection with the hydrometer. As soon as the

drometer operator making the test, name of the employee who blew the boiler, date the locomotive departed and to what point dispatched. It is easy to check the accuracy of the operator's work, all that is necessary being to test a sample of water from a locomotive ready for service and check it against the operator's record.

Additional Advantages of Systematic Blowing

This system of blowing boilers has practically eliminated foaming boilers and damage resulting therefrom. The avoidance of all boiler washing except at monthly inspections saves much unnecessary boiler stress due to contraction and expansion and effects a substantial reduction in the number of broken staybolts, cracked sheets and leaky tubes. This reduced cost of boiler maintenance is reflected in the reduced cost of locomotive repairs. Appreciable savings also result from increased enginehouse efficiency, due to the forces being at liberty to make any necessary repairs at any time desired, instead of having to wait until the boiler washers complete their work.

One of the greatest benefits derived from the less frequent boiler washing is the increased availability of locomotives for service. Under the former practice, it often happened that locomotives, needed by the operating department, were unavailable on account of being held up for boiler washing alone. Under the present practice, it is not uncommon for a passenger or freight locomotive to arrive at a terminal at the end of a 400- to 525-mile run and be immediately turned back for another trip.

The practice described has been in operation long enough to prove conclusively that the less boiler washing performed, the better interior condition of boilers. It is believed that these locomotive boilers could just as easily be operated from annual inspection to annual inspection without washing or water changing, as from monthly inspection to monthly inspection.

Revised Pension Bill Introduced in Senate

WASHINGTON, D. C.

A REVISED railroad pension bill, representing a combination of features contained in the Wagner and Hatfield bills on which hearings were held in the last session of Congress, was introduced in the Senate on March 29 by Senators Wagner of New York and Hatfield of West Virginia, as S. 3231, after having been reported to the Senate committee on interstate commerce the day before by a sub-committee. The Wagner bill had been proposed by the Railway Labor Executives' Association, while the Hatfield bill had been proposed by the Railroad Employees National Pension Association. They were opposed at the time by a committee representing the railroads, both because of particular provisions in the bills and because of the enormous expense that would be imposed on the railroads. The revised bill, which the sub-committee said included changes to adjust them to present economic conditions, it now estimates would cost the railroads in the first year about \$60,000,000 and the employees about \$30,000,000, but these amounts are expected to increase gradually. An explanatory memorandum on the new bill, issued by Senators Hatfield and Wagner, includes the following:

It is agreed that all railroads which have been subjected to the jurisdiction of Congress are to be treated together as one em-

ILLINOIS CENTRAL SYSTEM
HYDROMETER TEST REPORT
Sheet No. 1. January 5th 1934
Mr. A. M. Unshler, Superintendent.
Herewith hydrometer test report covering 24 hour period ending at 11:50 P. M.
January 4th 1934, at 27th Street Shop.

Engine	Train	Engineer	Date Last Washed	Arrived From	Pops or Whistle White?	Total Dissolved Solids		Disp. To	Remarks
						Arr.	Dep't		
7048							0	Clinton	Insp
1145							80	Kankakee	
1157							80	"	
1310							90	"	
1962							0	Clinton	Insp
1090							0	Champaign	
2453							60	Memphis	
2438							100	"	
1141							0	Waterloo	
1786							90	Champaign	
1678							40	Kankakee	
2436							0	St. Louis	Insp
1158							70	Kankakee	
1630							100	"	
1144							30	"	
1177							0	Waterloo	
2456	26	Fogarty	12-15	Memphis	yes	40	40	Memphis	
1999	PD2	LaPoint	12-8	Champaign	no	100	100	Centralia	
1684	CD2	Allison	12-10	Centralia	no	80	80	Champaign	
1689	86	Buhl	1-3	Kankakee	no	40			
1312	12	Johnson	12-29	"	no	80			
7045	74	Winkler	12-21	Clinton	yes	120	100	Clinton	
1147	28	Cahill	12-27	Kankakee	no	80			
2452	10	Seather	12-22	Centralia	no	100	100	Centralia	
2446	18	Tyrell	12-19	St. Louis	no	120	100	St. Louis	
1171	12v	Mayer	12-10	Waterloo	no	60	60	Waterloo	
2458	4	J. Halley	12-10	Memphis	yes	120	100	Centralia	
1134	30w	Vicard	1-2	Freeport	no	60	60	Freeport	

Copies to—
Mr. E. VanBergen, Gen'l Airbrake Engr.
Nelson-Buckley-Dunbar, Rev. Engr.

Signature: _____
General Foreman
Title: _____

Daily Hydrometer Test Report Covering a 24-Hour Period at the Twenty-Seventh Street (Chicago) Shops

test is made, a glance at the chart tells the operator how many glasses must be blown. If the test shows more than 130 grains of total dissolved solids, another test is made after the blowing is completed.

In addition to the daily report, a book record is maintained in each laboratory covering each sample tested,

Savings as a Result of Less Frequent Boiler Washing and Water Changes on the Illinois Central in 1933, Compared with 1930

	1930	1933
Total number of boiler washings.....	87,209	15,889
Total number of water changes.....	43,917	93
Total cost	\$550,896	\$54,493
Total locomotive-miles	48,553,951	33,912,316
Average cost per 1,000 loco.-mi.....	\$11.35	\$1.71
Saving per 1,000 loco.-mi.....		\$9.64
Total annual saving.....		\$307,631
Cost of water blown, at \$6,000 per month.....		\$72,000
Approximate cost of making hydrometer tests		\$3,000
Net annual saving.....		\$232,631

showing the date, locomotive number, train number, engineman's name, date when the boiler was last washed, terminal from which the engineman arrived, total dissolved solids on arrival and departure, name of the hy-

ployer. All persons in the service of the railroads are to be regarded as employees of the one employer. One common retirement system is to be established for making old-age and disability payments to the employees of all railroads. The old-age pension or annuity is to be based upon the wages and the length of service upon all railroads, with specified maximum limits. The payments are to be provided for from joint contributions by the railroads and the employees.

The Treasury of the United States is made the custodian of the funds. The payments to be made by the Treasury are limited to the amounts provided by the railroads and the employees, and no burden is placed on the public treasury.

The administration of the system is to be placed in a board of five, to be appointed by the President of the United States, with the advice and consent of the Senate.

In the consolidated bill the amount of the pension or annuity is to be 2 per cent on the basic wage of the employee multiplied by the number of years of service, but is not to exceed 60 per cent of the basic wage. The basic wage is to be determined upon average compensation as defined in the bill, but no compensation in excess of \$400 per month is to be recognized in determining the basic wage.

Pensions are to be payable from and after age of 65, or before age 65 after 30 years of service. Retirement is to be compulsory at age 65, with a provision for an agreement by the employee and the railroad to extend the employment from year to year, but not beyond age 70. Compulsory retirement at age 65 shall not apply to executives until five years after the act takes effect.

If the pension payments are begun before age 65 after 30 years of service, the maximum pension payment is reduced from the 60 per cent maximum by 4 per cent of the basic wage for each year the employee is less than 65 years of age when the pension payments are begun. Thus, at age 60 the maximum pension is 40 per cent and at age 55 it is 20 per cent, and no pension at all is payable below age 51. The reduction in the maximum does not apply where the employee is retired by the railroad for mental or physical disability.

Assuming the above average wage of \$1,667 the average maximum monthly old-age pension will be \$83.33. By reason of reductions on account of shorter periods of service, on the assumptions herein made, the actual average will be \$71.08 for pensions to be granted during the first full year of operation. Applied to the compensation received by individual employees the pensions will bear such reasonable relationship to the compensation as will encourage satisfactory retirement for the good of the service.

A payment is provided in the case of disability of an employee by accident or disease. The disability must be total and permanent and must result from the service. This disability payment is equal to the retirement annuity or pension then payable, but is not to be less than \$50 per month. Any amount otherwise payable by the railroad on account of the injury or disease is deducted from the disability payment. Payments on account of disability do not, however, affect the payments to be made as an old-age pension or retirement annuity, but no old-age pension will be made while disability payments are being made.

The pension or annuity payments are to be provided by payments in a uniform contribution percentage by the employees upon their wages and by the carriers upon their operating revenues. This results at the outset in a payment of approximately one-third by the employees and two-thirds by the railroads. The railroads are required to deduct and retain the employee percentages and to pay these with their own payments quarterly into the Treasury of the United States.

The board is to determine from time to time the contribution percentage on the wages and on the operating revenue. This is fixed at 2½ per cent until the board determines otherwise. This is designed to provide a small buffer fund at the outset. It is the purpose of the contribution percentage to provide only from time to time approximately the amounts required for the current requirements for old-age and disability payments and the expenses of administration.

Assuming that all who could possibly be entitled to retire and take their pensions will do so, including all who are 63 years of age and over, and all who have had 30 years of service and who are 60 years of age and over, estimates based on data submitted at full hearings before the subcommittee of the Committee on Interstate Commerce of the United States Senate held during January, 1933, show that on an average basic wage of \$1,667 the maximum pension payments required during the first full year of operation will not exceed \$90,000,000. Of this the employees would pay about \$30,000,000, and the railroads about \$60,000,000. However, as the total wages are now about \$1,500,000,000 and the total operating revenues are about \$3,500,000,000, the 2½ per cent on the combined \$5,000,000,000 will require payments amounting to approximately \$125,000,000 during the first full year of operation. While the amount payable in pensions will increase gradually from year to year, it is estimated that the \$125,000,000 will be more than enough to meet the maximum yearly pension payments

for at least each of the first five years. It would be entirely practicable to omit the minimum 2½-per cent requirement and collect only the actual amounts required.

In addition to the contribution percentage, the consolidated bill further provides for an additional percentage payment by the employees of two-tenths of 1 per cent on the basic wage the first calendar year and increasing by two-tenths of 1 per cent each succeeding calendar year. This payment, with an equal amount paid in an additional percentage by the railroads, is to be accumulated with interest to the credit of each individual employee. This is to be used to provide a fully paid pro rata part of the pension on retirement. In case of death the credit, less the sum of the pension payments, if any, theretofore made from the credit, will be paid to such beneficiaries as the employee may designate. The fully paid parts of the old-age pensions or annuities provided by the credits will reduce the amounts required from the contribution percentages. These reductions will be made at an increasing rate until no further contribution percentages will be required for old-age pensions or annuities. Thereafter the credits will provide separately in full for the old-age pension or annuity of each employee. This end will be substantially reached in 60 years.

It is not practicable, nor is it the intention by this additional percentage, to require any considerable additional payments or to make any considerable provision for the pensions through these additional payments while the system has the very heavy burden of providing principally for pensions on account of service before the adoption of the system when no provision for the payment of such pensions was being made. The consolidated bill aims at this time and during at least 10 years to follow to impose the least possible burden on the railroads and the employees, and to use the available funds to the greatest degree in payment of old-age pensions and equally to provide relief of unemployment.

The bill specifically contemplates relief against unemployment in the immediate retirement of about 100,000 aged employees. This would permit the advancement of all presently in the service and the reemployment of approximately 100,000 from those now on the seniority lists who have been laid off and are unemployed because of the depression.

The present number of railroad employees is approximately 1,000,000, and the number was as high in 1920 as 2,000,000. It is probable that in the shift of employment the number of unemployed entitled to seniority at this time is far less than the difference between the two figures. The immediate reemployment of 100,000 would help materially in relieving the unemployment situation.

It is also certain that the industry would be greatly benefited by taking out of the service a very large proportion of aged employees, who would be replaced by younger employees—largely men with growing families, who are, perhaps, in the greatest need of the employment and the income.

It is believed that the modifications in bills S. 817 and S. 1529 embodied in the proposed consolidated bill meet in the most practical way the present economic situation, both as to the railroads and the employees, in providing immediate and certain relief for aged and disabled employees and in contributing in the greatest degree to the urgent need for relief from unemployment.

Revised Labor Act Proposed By Eastman

WASHINGTON, D. C.

A PROPOSED bill providing for a revision of the Railway Labor Act and the creation of a National Board of Adjustment, and a new National Mediation Board, was sent by Co-ordinator Eastman on March 31 to the chairman of the committee on interstate and foreign commerce of the House of Representatives. A copy of the accompanying letter and proposed bill also has been sent to the chairman of the Senate committee on interstate commerce. The President has refrained from filling two vacancies in the present Board of Mediation while awaiting this report from Mr. Eastman.

The bill was proposed as a substitute for one proposed by the Railway Labor Executives' Association, H. R. 7650, on which Mr. Eastman had been asked to comment. To simplify his suggestions he recommended the

substitute bill, which is like H. R. 7650 in its main outlines but differs in various details, some of them important. The attached bill, Mr. Eastman said, would:

(1) Include within its scope not only carriers by railroad and sleeping car and express companies, but also all companies which operate equipment or facilities or furnish service included within the definitions of the terms "railroad" and "transportation" in the Interstate Commerce Act.

(2) Clarify various provisions in the present Railway Labor Act.

(3) Include in that act provisions, now included in the temporary Emergency Railroad Transportation Act, 1933, intended to insure the complete divorcement of railroad employees and managements in the choice of representatives to deal one with the other, and provide adequate means for the enforcement of these provisions.

(4) Provide means for the prompt settlement of disputes growing out of grievances or out of the interpretation or application of agreements concerning rates of pay, rules or working conditions, through a National Board of Adjustment, divided into four independent parts, whose awards will be enforceable in the courts.

(5) Create a new National Mediation Board, like the present Board of Mediation but reduced in the number of its members from five to three and adapted to the work which it will be called on to perform under the amended Act.

The proposed bill has been discussed informally with railway labor executives, representatives of the carriers, and the chairman of the present Board of Mediation, and their comments and criticisms have been very helpful, Mr. Eastman said. The Railway Labor Act was drafted in conference between representatives of the carrier and labor executives. It was designed throughout to accomplish a settlement of differences between labor and management by agreement of the parties without any element of compulsion. It has worked well in many respects, he said, but experience, particularly in recent years, has shown the need for strengthening and improving it, and the proposed bill introduces an element of compulsion.

Section 1 of the bill differs from the present act in that it includes in the definition of "carrier" all companies which operate facilities or furnish services which are closely affiliated with and really form a part of railroad facilities or service. These provisions differ from those in H. R. 7650 only in that the language used is thought to be clearer and less ambiguous. The principal companies added by the proposed definition are the refrigerator car lines.

Section 2 of the present act contains provisions intended to insure absolute freedom of choice by both parties in the selection and designation of representatives to act for them in disputes over labor questions. However, no adequate means of enforcing these provisions were provided and practices were continued or grew up "which were subversive of the principle involved." To meet this situation, Congress took the first step when it incorporated paragraphs (o), (p) and (q) in Section 77 of the amended Bankruptcy Act, and these were applied to all railroads by Section 7(e) of the Emergency Railroad Transportation Act, 1933. By reason of these provisions, Mr. Eastman says, it is now unlawful for any carrier by railroad to

(1) Deny or in any way question the right of its employees to join the labor organization of their choice.

(2) Interfere in any way with the organization of its employees.

(3) Use its funds in maintaining so-called company unions.

(4) Influence or coerce its employees in an effort to induce them to join or to remain members of such company unions.

(5) Require any person seeking employment to sign a contract or agreement promising to join or not to join a labor organization. And if such a contract has been enforced, the railroad is required to notify its employees by an appropriate order that said contract has been discarded and is no longer binding on them in any way.

"That the principle underlying these provisions is sound is, I believe, hardly open to question," Mr. Eastman says in the letter. "It means only that railroad managements must keep their hands off, so far as labor organizations are concerned. Whatever may have been the attitude of employees in the past, it is plain that they are how prepared to insist upon their right as American citizens to bargain and deal collectively with their employers upon equal terms. The principle is recognized in much the same language in the National Industrial Recovery Act with respect to other industries, and it is implicit in the present Railway Labor Act and the Norris LaGuardia Anti-Injunction Act.

"In Appendix 1 of my recent report (Senate Document No. 119) to the President and Congress upon the general railroad situation. I discussed these provisions and what I have done to secure compliance with them. My investigations showed that there were many existing practices which were not in accord with these provisions. The railroad managements, however, have on the whole manifested a commendable desire to put their houses in order in these respects, and the situation has been much improved.

"Nevertheless it seems to me not only appropriate but highly important that these provisions should be incorporated in the permanent measure, the Railway Labor Act, which is designed to govern the relations between the railroads and their employees; that they should be somewhat improved in form; and that adequate and permanent means should be provided for their enforcement. The Emergency Railroad Transportation Act, 1933, is a temporary measure, and there should be nothing temporary about these provisions. Moreover, no satisfactory or adequate means for their enforcement is provided in the Emergency Act, the organization of the Co-ordinator is not well adapted for that purpose and is diverted from the duties for which it was designed by the effort at enforcement, and the language used in the Emergency Act is such that opportunities for litigation are presented. At least one large railroad has made it clear that it will take full advantage of these opportunities. In the circumstances it is plainly desirable that these provisions should be incorporated in the amended Railway Labor Act in the form which they are given in the Fourth, Fifth, and Sixth paragraphs of the amended Section 2 in the attached bill, together with the provision for enforcement which is contained in the tenth paragraph.

"The latter provision is for direct enforcement by the Department of Justice, upon direct appeal by the labor organizations to the several U. S. district attorneys for the prosecution of violations. Penalties are to run against the carriers, their officers and agents. H. R. 7650 proposes to make the Federal Co-ordinator of Transportation the intermediary through which such appeal to the Department of Justice may be made. This seems quite unnecessary, and furthermore it imports the agency of a temporary officer into the enforcement

provisions of a permanent law." The analysis of the bill continues:

Section 3 provides for a National Adjustment Board divided into four parts independent of one another to adjust disputes arising out of grievances or out of the interpretation or application of agreements between carriers and employees. Each division deals with the grievances of a group of crafts. It may be subdivided to take testimony but the decision must be by the entire division. There are thus, in effect, 18 boards for the taking of testimony and four to make decisions. Each division is composed of an equal number of representatives of management and labor, respectively, and its members are to be compensated by the organizations they represent. In case of a deadlock a neutral member may be selected by the parties or, if they cannot agree, is to be appointed by the National Mediation Board and to be compensated by the government.

This is a distinct departure from the present law and follows, in principle, the provisions of H. R. 7650. It differs from the latter in that it does not name the present national labor organizations as the parties to select the labor representatives on the Adjustment Board, nor does it have the same number on the several divisions. It is felt that the proposal of H. R. 7650 would freeze the administration of the act, so far as labor representatives are concerned, in the hands of labor organizations which negotiated the Chicago wage agreements of 1932, and provides no room for expansion or contraction with the growth and development of the labor organization movement. Nor is it consistent with the freedom of choice of representatives for which the same labor organizations so vigorously contend.

The present act provides for system or regional boards of adjustment or a national board, if the parties care to set them up, but they are not required to do so. There are now four regional boards, confined to the consideration of train service disputes; many system adjustment boards have been created for other crafts; but on many systems no boards whatever have been set up. All of these regional or system boards have equal representation of labor and management, and there is no way of compelling or enforcing a decision. There has been a growing tendency to deadlock the boards when set up. The result on a considerable number of important systems has been a large accumulation of unsettled disputes and grievances. Mediation has proved unavailing, and the employees in some instances have found it necessary to take a strike vote in order to force the appointment of an emergency fact-finding board by the President under Section 10 of the act.

This situation demands correction, and it appears that the only way to correct it is to introduce an element of compulsion. To this the employees are now willing to agree, so far as the minor disputes over grievances and interpretation of agreements are concerned, although they are not willing that compulsion should be introduced with respect to major disputes over wages, rules, and working conditions. If there is to be resort to compulsion, it clearly should be under the effective control of the government, and this can be provided to much better advantage in connection with a National Adjustment Board than in connection with a large number of regional or system boards, for it requires, whenever there is a deadlock, the appointment by the government of a neutral member to determine the issue and cast the deciding vote. Moreover, such a national board could establish and follow, to a considerable extent, uniform policies, with the result that the number of disputes requiring neutral arbitration would ultimately be reduced.

A similar adjustment board system for deciding grievance cases, with provision for avoiding deadlocks by resort to umpires, has been used very successfully for many years in such industries as anthracite coal mining, the manufacture of clothing, and book and job printing. More recently the system has been established in the bituminous coal mining industry. Three national boards of adjustment were set up for the entire railroad industry during federal control and the record reveals no difficulty whatsoever in promptly deciding the cases which reached these boards. They did not bog down, despite the fact that the basic labor situation at that time, owing to the rapid growth of the railroad labor organizations and the issuance of many orders affecting rates of pay, rules and working conditions, literally placed a premium on the generation of innumerable grievance cases. With the standardization in recent years of labor practices, wage rates, and rules, there is less likelihood now than in the days of federal control that a multitude of grievance cases will arise.

Furthermore, in the six years of experience of the United States Railroad Labor Board there was no undue delay or accumulation in the handling of grievance cases. Whatever the defects of other features of the operation of the Labor Board, no criticism has been made of its administration in this regard. And it is to be noted that this board was a larger and more unwieldy organization than the one here proposed; that it considered and disposed of all cases in the one large board; and sat only in Chicago, to which point all cases were brought.

The theory of a National Adjustment Board is vigorously contested by the carriers, on the ground that:

(a) It would be too cumbersome to handle the bulk of cases presented for adjustment.

(b) It would be too far removed from the property for adequate consideration of local conditions and of the personal relations between men and management.

(c) It would be more expensive for both employees and management than system adjustment boards.

(d) Application of the principle of compulsory adjustment would be ill-advised.

The workability of a National Board of Adjustment is attacked by the carriers because of the assumed enormous number of cases that are likely to come before it. It is stated that past experience has shown a tendency on the part of labor organization representatives to pass cases on for consideration rather than take the responsibility of settlement with the management. It is admitted that the same tendency is shown by railroad officials. In any event, it is argued, experience has shown that a very large number of trivial cases are allowed to go forward if there is a possibility of appeal to a superior tribunal. The centering of all such cases in a national board would, they fear, very soon cause congestion and delay. It is also contended that these cases would not be handled as well by a national board, because its members would find it impractical to hear the individuals directly involved in the dispute but would be compelled to have the record made locally and brought before the board in a second-hand presentation. The tendency would be to break up the human contacts that are all-important in the adjustment of human relations.

In view of past experience I believe that the experiment should be tried. Its success or failure will depend upon the spirit with which it is undertaken by both parties. The labor organizations must be brought to develop within the membership that spirit of discipline, responsibility and co-operation which is essential to the dignity of labor self-government. The leaders must recognize that this new departure which they are advocating will surely fail if a multitude of minor grievances are thrown back on the national board because of an unwillingness to accept local responsibility. The managements must govern their action in a similar spirit. If there is a failure, the records will show where the major responsibility lies. I'm not unduly sanguine of success but I believe that the chances favor the same degree of success as has been achieved in other industries, and that the results of the experiment will be worth while in any event. Labor has hitherto resisted all attempts at compulsory adjustment of disputes and grievances, and full advantage should be taken of the present concession, which may have results of far-reaching importance.

The attached bill permits the establishment of regional or system boards of adjustment, if agreed upon by the parties. If any such boards are to be specifically spelled out in the law, the government should not be put to the expense of furnishing or to the labor of appointing neutral members therefor, and the right of appeal to the National Adjustment Board should be preserved.

Section 4 of the bill proposes to substitute for the present Board of Mediation, consisting of five members, a new Board, called the National Mediation Board, consisting of three members. It is not intended as a reflection upon the present board, which has many important accomplishments to its credit, and has had a difficult task to perform in view of the fact that its powers are wholly persuasive.

Nevertheless, appointment of a National Adjustment Board to deal with a considerable number of grievances that under the present law are brought before the Board of Mediation, in an effort to obtain settlement by agreement, makes it unnecessary that the new board shall have as large a membership. Furthermore, a small membership for such a board avoids danger of lack of cohesion in the administration of the law. It is essential that the policy of the National Mediation Board shall at no time be disturbed by internal dissension.

On the other hand, it is proposed to give to the new and smaller board the power to select and appoint employees to act as mediators, under the instruction of the board, with the same freedom that the power to delegate its work is now given to the Interstate Commerce Commission. The organization that is now proposed will have the duty of appointing neutral arbitrators where necessary to obtain decisions from the National Board of Adjustment, and will continue to function without partisanship in the mediation of disputes concerning rates of pay, rules and working conditions and other disputes that do not go to the adjustment board for settlement.

The bill proposed by Mr. Eastman was introduced in the Senate on April 2 as S. 3266, by request, by Senator Dill, chairman of the Senate committee on interstate commerce, which expects to hold a hearing on it next week.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 24 amounted to 608,462 cars, a decrease of 17,311 cars as compared with the week before but an increase of 128,503 cars as compared with last year and of 47,344 cars as compared with 1932. A large part of the decrease as compared with the week before was in coal, which fell 14,543 cars, but small reductions were also shown in the loading of grain and grain products, forest products, coke, and live stock. As compared with last year increases were shown as to all commodity classifications except grain and grain products and live stock. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, March 24, 1934

Districts	1934	1933	1932
Eastern	142,582	107,865	128,587
Allegheny	120,387	86,567	111,984
Pocahontas	47,371	30,109	37,788
Southern	95,957	79,833	88,673
Northwestern	68,939	57,191	64,193
Central Western	84,074	73,962	81,948
Southwestern	49,152	44,432	47,945
Total Western Districts	202,165	175,585	194,086
Total All Roads	608,462	479,959	561,118
Commodities			
Grain and Grain Products	29,884	31,355	27,107
Live Stock	13,630	15,035	16,195
Coal	133,616	92,429	117,122
Coke	7,394	4,183	5,221
Forest Products	24,810	15,970	20,307
Ore	4,378	2,255	2,981
Mdse. L.C.L.	166,542	155,267	185,343
Miscellaneous	228,208	163,465	186,842
March 24	608,462	479,959	561,118
March 17	625,773	453,637	584,759
March 10	612,402	441,361	575,481
March 3	604,137	481,208	559,479
February 24	573,371	462,315	535,498

Cumulative total, 12 weeks 6,937,205 5,750,939 6,790,829

Class I railroads on March 14 had 352,489 surplus freight cars in good repair and available for service. This was a reduction of 22,194 compared with February 28, at which time there were 374,683 surplus freight cars. Surplus coal cars on March 14 totaled 85,850, while surplus box cars totaled 213,293. Reports also showed 25,923 surplus stock cars while surplus refrigerator cars totaled 11,353.

A Communication . . .

From Young Railway Enthusiasts Ready to Go on Popularizing Drive

NEW YORK.

TO THE EDITOR:

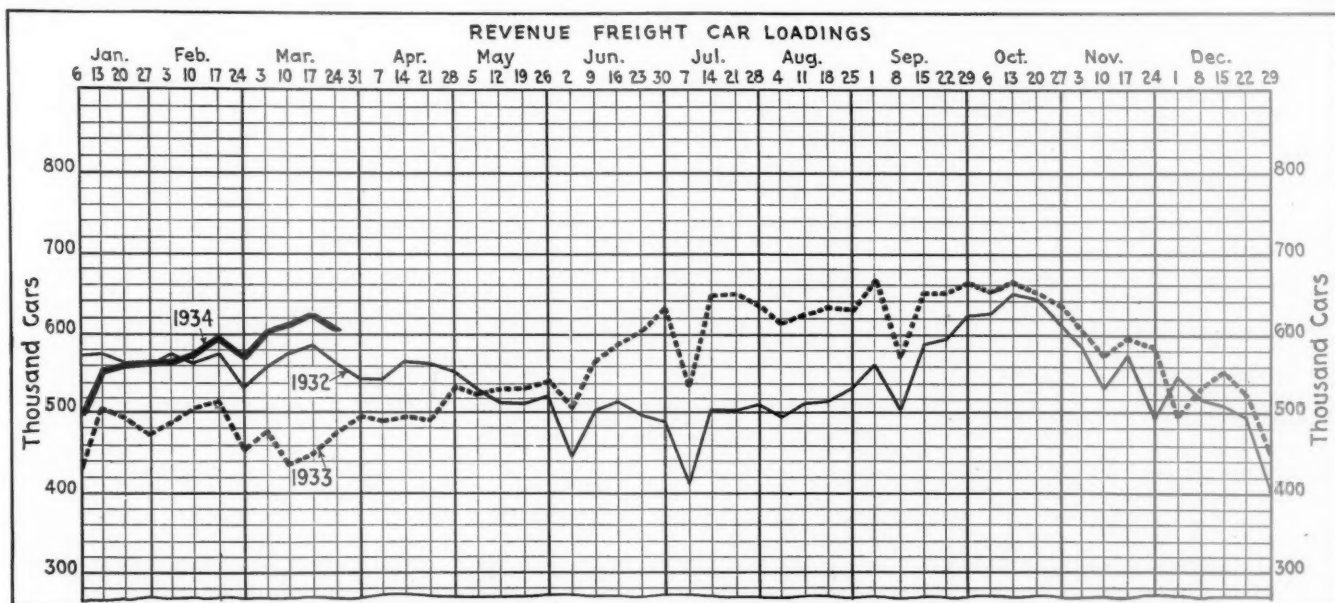
Referring to Mr. Fisher's letter which appeared in the *Railway Age* of February 24:

It might be of interest to Mr. Fisher, and your readers in general, to learn that there is, in New York, a club of young men which was formed about two years ago to popularize the railroads with the younger generation. This organization, known as the Vanderbilt Railroad Club, has, at the present time, 14 active members and over a score of corresponding members. At a special meeting called for the purpose of discussing Mr. Fisher's communication, it was resolved that, should the railroads decide to act on this suggestion, as we believe they most certainly should, the unqualified co-operation of the club would be tendered them.

The plan of operation which follows is suggested by the club: With our organization as a nucleus, and with the co-operation of the publicity departments of the railroads wishing to participate in this movement or the railroad's committees on public relations, the ball could be started rolling by the posting of notices at railroad stations of the formation of the "Amateur Railroaders of America" or, of course, a more suitable name could be used if one be found. Interested young men, suggested age limits are 14 to 21, could register at these stations from which the names could be sent to headquarters. A membership card and pin would be sent to all those registered, and when a certain number of names had been received from one locality, a chapter could be formed there, which would act semi-independently, with frequent reports to headquarters. A monthly bulletin could be published, contests of railroad knowledge with prizes in the form of locomotive photographs, operating timetables and other inexpensive but treasured material, (and the average railroad enthusiast avidly cherishes such seemingly small trifles), and escorted visits to railroad points of interest by local chapters could be sponsored by railroad officers to keep interest at a high pitch.

The above outline is rather sketchy but we are quite sure that it could be perfected into a working organization that would do much to popularize the railroads. It could be supported by a small fund that could easily be diverted from the general advertising and publicity appropriation of the railroads participating in this movement. We believe that the plan is worthy of the most serious consideration.

HAROLD LESSERSON,
President, Vanderbilt Railroad Club.



NEWS

Rail and Bus Rate Truce Proposed for Southeast

National Recovery Administration outlines suggested plan; complete agreement lacking

The National Recovery Administration on April 2, announced through a press notice what it described as an agreement reached between the railroads and the motor bus lines in the Southeast on a basis of passenger fares designed to prevent destructive competition in rate-making, to become effective on June 1 for a six-months period. Although the press statement referred to this "agreement" as being subject only to Interstate Commerce Commission approval of the railroads' participation and to modification of the N. R. A. bus industry code, and as "hailed as one of the most significant steps in recent transportation history," inquiry from other sources disclosed that it is so far only a proposed agreement, and that the Southern Railway, which has been making fares at the rate of a cent and one half a mile, has thus far declined to agree.

The proposed agreement was discussed at a meeting last week in New Orleans following negotiations between the N. R. A., represented by Sol A. Rosenblatt, division administrator in charge of transportation codes, E. E. Hughes, deputy administrator, the Southeastern Passenger Association, representing the railroads, Co-ordinator Eastman, W. V. Hardie, director of the Bureau of Traffic of the Interstate Commerce Commission, and representatives of the bus operators.

Under the proposed agreement motor bus lines operating in the territory east of the Mississippi and south of the Ohio would not only bind themselves to the maintenance of minimum rates but to the abolishment of party or charter rates and of free passes, and the railroads would maintain passenger fares of not less than 2 cents a mile for one-way tickets or 1.8 cents a mile for round trips—thus abolishing excursion rates. In that territory the agreement would fix motor bus rates for hauls of less than 175 miles at "the comparable or competitive rail fares applicable between the same points." On longer trips the bus rates would be as follows:

"For hauls of from 176 to 299 miles, the minimum motor bus fare may be 85 per cent of said railway fare.

"For hauls between 300 and 499 miles, the minimum motor bus fare may be 80 per cent of said railway fare.

"For hauls between 500 miles and over, the minimum motor bus fare may be 75 per cent of said railway fare."

The agreement would also permit motor bus operators to charge round trip fares not less than 180 per cent of the one way fares and, in cases where the highway mileage between points is 80 per cent or less of the competitive rail mileage, to charge the railway base rate per mile for the actual highway mileage covered. It is also provided that "in cases of inter-territorial hauls to and from the above described territory, the combination of local or basing fares tendered by lines beyond the above described territory may be observed by such motor bus operators or railroads as maxima" and that motor bus operators "shall be free to meet the fares of motor bus or rail carriers operating routes wholly or in part outside of the above described territory."

The proposed agreement authorizes the creation of a joint committee, composed of three representatives of bus operators and three representatives of the railroads, to have authority by a majority vote to modify the agreement as and if necessary.

Shoup Made Engineering Assistant to Boatner

Stephen E. Shoup, assistant engineer on the staff of the president of the Kansas City Southern, with headquarters at Kansas City, Mo., has been appointed engineering assistant to V. V. Boatner, western regional director for the federal co-ordinator of transportation, Chicago. Mr. Shoup has been granted a leave of absence to accept the new position.

Associated Traffic Clubs

The semi-annual meeting of the Associated Traffic Clubs of America will be held at the Tutwiler Hotel, Birmingham, Ala., on April 24 and 25. The docket for the meeting is as follows:

April 24—Morning Session

Opening of convention
Address by Prof. Emory R. Johnson, Subject: Transportation Legislation—Government Ownership.

General discussion from the floor
Report of the board of directors

Afternoon Session

Report of the Membership committee
Report of the Finance committee
Report of Transportation Research Institute committee

Address by J. L. Keeshin, president of the National Highway Freight Association. Subject: Transportation Legislation—Motor Trucks.

General discussion from the floor
Report of the Committee on Education and Research

Address by John McAuliffe, president of the Isthmian Steamship Company. Subject: Transportation Legislation—Water Carriers.
Report of Speakers committee

April 24—6 p. m.

Banquet
Address by Judge R. V. Fletcher, general counsel of the Association of Railway Executives. Subject: Transportation Legislation—The Rail Carriers.

April 25—Morning Session

Amendment to Article III of the constitution
Discussion of traffic club problems and activities

Emergency Board Reports on D. & H. Labor Dispute

Finds that all substantial causes for the threatened strike have been removed

The emergency board appointed by President Roosevelt to investigate the dispute between the Delaware & Hudson and its train and engine employees has submitted a report, which was made public at the White House on April 3, stating that all substantial causes for the threatened strike have been removed. After briefly reviewing the history of the controversy the board reported on the hearings and its conclusions as follows:

THE HEARINGS

The board heard the parties for three days on the two major questions presented, to wit, (1) the right of the Brotherhood of Locomotive Engineers to speak for the engineers on the road, and (2) the appropriateness of the procedure followed in an effort to bring about a return to the old contracts. It then formulated the following plan of settlement which it deemed fair and equitable to both sides:

1. That the parties agree to go back to the old contracts on April 1, 1934.

2. That grievance cases and claim for back time of trainmen and the other matters listed in the strike ballot be submitted to a committee of four, two to be selected by the carrier and two by the brotherhoods representing the employees, each side to pay the cost of its representatives and decisions of a majority of the committee to be binding.

3. That should the committee for any reason fail to decide any of the cases, such undecided cases be submitted to an umpire to be selected by the committee or to be appointed by the Board of Mediation in case the committee is not able to agree upon an umpire. The decision of the umpire was to be final and binding. Compensation of the umpire was to be fixed by the committee, or by the Board of Mediation, and the expenses of the hearings were to be divided equally between the parties.

The brotherhoods representing the employees readily accepted this plan of settlement.

The carrier, in recognition of the understanding of the employees that this was their right or option, preferred to announce that, without regard to any proposals of settlement, offers or suggestions, it had voluntarily decided to return to the old agreements as soon as practicable. By con-

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House Committee Holds Hearing on Six-Hour Bill

M. W. Harrison, president of Security Owners' Association, presents statement in opposition

Five days of hearings were held before the House committee on interstate and foreign commerce last week on the bill introduced by Representative Crosser, of Ohio, at the request of the Railway Labor Executives' Association, to provide for a six-hour basic day in railroad service. The testimony presented, both on behalf of the railroad labor organization and on behalf of the Association of Railway Executives, was much the same as that previously given before the Senate committee on interstate commerce which was reported in the *Railway Age* of March 10. Milton W. Harrison, president of the Security Owners' Association, also made a statement in opposition to the bill, taking the position that the public interest cannot be served by legislative action which might tend further to jeopardize investment values.

"It is the opinion of the Security Owners' Association that the passage of the proposed legislation at this time would be most unfortunate," Mr. Harrison said. "After four years of depression, during which time railroad credit sank to unprecedented low levels and a fifth of the mileage of the country went into receivership, the downward course of traffic and earnings has been checked. If nothing is done to upset the balance between income and expense which must exist as a prerequisite to solvency, there is hope that by the end of the year the railroads will be in a position to add substantially to employment without impairment of their resources.

"To saddle the carriers with the costs incident to passage of the proposed legislation at a time when recovery just seems to be taking definite form, would seem tantamount to decreeing their economic destruction.

"Labor has been quoted as proposing that a part of the cost of the six-hour day be met by the bondholders through reduction of 2 per cent in the prevailing rates of interest. This proposition is neither morally sound nor legally possible. There is no basis for viewing bondholders as a class apart, largely untouched by depression. Stocks and bonds together make up railroad capital. If an investor chooses to forego the possibilities of profit which accrue to the stockholder in return for a fixed low rate of interest, the whole purpose of the capital structure is to make it possible for him to do so. Actually, interest is not being paid on \$1,500,000,000 of railroad bonds in default, or about 12½ per cent of the total. The fact, however, that interest generally has been maintained does not minimize the seriousness of capital's losses, for dividends except in a few instances have disappeared, and interest payment on billions of dollars of bonds has been made possible only through loans from the Reconstruction Finance Corporation, repayment of which must be made at the expense of stockholders. As a prac-

tical matter, however, individual investors are often both stockholders and bondholders. In these cases bond interest has served to hedge the loss of dividend income, and reduction of interest rates would work unjust hardship.

"Investors understand the toll depression has taken from labor. However we wish to point out that the financial loss suffered by capital has been far greater, for although the amounts paid for labor by railroads have dropped more than 50 per cent since 1929, during the same period the income applicable to interest and dividends declined by 70 per cent. In addition, capital suffered heavy losses in the decline of security values, losses which would be further intensified if additional cuts were to be made in income."

K. C. S. Wage Plan Postponed

The Kansas City Southern, on April 1, decided to postpone the effective date of its new wage plan until April 16. The plan, which provides for compensation on a time basis for all time worked and the removal of all unnecessary restrictions as to the kind and character of the work done, was to become effective on March 1, but when on February 28 the executive committee of the railway brotherhoods issued an order calling for a strike on March 1, the effective date of the wage plan was postponed until April 1.

Increased Car Loading Estimated for Second Quarter

Freight car loadings in the second quarter of 1934 will be about 10.7 per cent above actual loadings in the same quarter in 1933, according to estimates just compiled by the thirteen Shippers' Regional Advisory Boards. On the basis of these estimates, freight car loadings of the 29 principal commodities will be 4,367,725 cars in the second quarter of 1934, compared with 3,945,568 actual loading for the same commodities in the corresponding period last year. Each one of the boards estimates an increase in the loadings for the second quarter of 1934, compared with the same period in 1933.

Changes in Co-ordinator's Staff

H. J. German, eastern regional director for the co-ordinator, has resigned effective April 1 to resume his former duties as president of the Montour, with headquarters at Pittsburgh, Pa. The resignation was made necessary, to the regret of the co-ordinator, by matters which have arisen in connection with that company. The co-ordinator took occasion to express his appreciation of the services which Mr. German has rendered and which have been most satisfactory. For the time being his assistant, H. H. Temple, will serve as acting director.

Effective April 1, also, the San Francisco office of the co-ordinator will be closed, since it has been found that the co-ordination survey in the Pacific Coast district can be supervised as well from the Chicago office. J. E. Hutchison, who has been in charge of the San Francisco office, leaves the employ of the co-ordinator with mutual regret.

Merger in Canada Not Favored by Fullerton

C.N.R. chairman says all its benefits can be secured by co-operation

Judge C. P. Fullerton, chairman of the trustees of the Canadian National, has issued a statement to the employees of that company, in effect urging them not to worry about the loss of employment by railway consolidation, provided they are willing to do their part in promoting the successful operation of the property under the existing law, which provides for pooling of services and facilities of the competing carriers, but not for consolidation.

"At the outset," his statement reads, "let me say that I am not one of those who consider the Canadian National Railways situation as hopeless. For months past there has been on foot a propaganda looking to the amalgamation of the Canadian National and Canadian Pacific railways. I can readily understand that such an agitation may have a very serious effect upon the morale of the workers. The fear that unified management might result in a diminution of employment is readily understandable. It is essential in the interests of the railroads themselves that conditions of service should be such that the profession of railroading in all its varied aspects should be made attractive to the best of our young men, and this can only be done by the railroads offering at least as much security of employment as do other professions and occupations. I desire, quite frankly and sincerely, to express my sympathy with the workers in this regard, and my appreciation of the anxiety which has been, and still is, the lot of those whose livelihood and homes are dependent on the continuation of their employment by railroads." Continuing, he said in part:

"The propaganda of which I have spoken is based on the bland assumption that where an enterprise which has been taken over by the expenditure of public money and an enterprise which is still under private ownership find themselves as a result, among other things, of depressed business conditions, conducting their operations on an unprofitable basis, the publicly-owned enterprise should be made virtually to surrender its existence as a separate entity, and leave the garnering of whatever harvest is presently available, and its equity in future prosperity, to its privately-owned competitor. The underlying idea apparently is that the money of a shareholder has a sacred quality denied to that of a mere taxpayer.

"The two grounds put forward in support of the proposals for amalgamation are:

1. That a very large saving can be effected.
2. That it would relieve management from the evils of political influences.

"As to the first, I may say that already the Canadian National Railways have, through economical management, greatly reduced their operating expenses, total disbursements on that account in 1933 being \$113,000,000 under the 1928 figures,

(Continued on page 518)

New Haven Cars Embody New Principles of Design

Passenger coaches to be streamlined and fitted with facilities for every comfort

The fifty New York, New Haven & Hartford coaches, contract for which has been awarded to the Pullman-Bradley Car Corporation, Worcester, Mass., and on which deliveries are to be made in the latter part of 1934, are to be built to the designs of Walter Dorwin Teague. The



Streamlining and Smooth Exterior Surfaces Are Noticeable Features of the New Haven Cars

new cars, which embody radically new principles of design, will be operated, so far as possible, as unit trains, but are interchangeable with present equipment if occasion demands. The streamlining of the body and the greatly decreased weight, from 135,000 lb. each with present coaches, to 100,000 lb. with the new ones, marks the first adaptation of modern design to standard railroad coaches and will be reflected in reduced fuel consumption.

In order to reduce wind resistance by deflecting air currents, an approach to a tubular cross-section has been adopted. As the cars are air-conditioned the usual clere-story has been eliminated, and a turtle back roof adopted. The overall height has been reduced 12 in. without sacrifice of headroom inside. All moldings have been eliminated from the sides and the windows, grouped in pairs, are framed in a round-cornered polished aluminum band. Thus an effect familiar in automobile body construction has been obtained.

The interior has been designed for the maximum of passenger comfort. Easy riding seats, cleanliness, and ample light, have been the designer's aim. Air-conditioning



Seats Are Unusually Comfortable—Pivot Arrangement Facilitates Turning

provides an agreeable atmosphere at all times, as well as a quiet ride. The elimination of dust and dirt makes high-keyed color combinations and decorative effects possible. In one scheme rich blue and silver predominate, with accents of vermilion beneath a white ceiling.

An important innovation will be the seats planned on automotive lines. These seats will be made of metal tubing constructed on the "angle of comfort" principle with detachable cushions and backs and molded arms and will weigh 65 lb. per seat less than the present type. An ingenious pivot arrangement will allow for sociability or a foursome of bridge. Chair

arms as well as window sills are of molded plastic compound, and non-shatterable glass is used. Luggage racks are of aluminum, effecting another weight saving of several hundred pounds.

The lighting has been given particular attention. With the indirect principle discarded because of the waste of current, a system has been adopted which directs the light downward in controlled beams. This eliminates glare and provides concentrated light where the passenger needs it for reading comfort.

Club Meetings

The Canadian Railway Club will hold its next meeting at the Windsor Hotel, Montreal, on Monday evening, April 9. Recent progress in the development of the steam locomotive will be the subject of a paper by Mr. Lipety, consulting engineer, American Locomotive Company.

The Transportation Club of San Francisco, at its recent annual meeting, elected officers for the ensuing year as follows: President, J. A. Rettew; First Vice-President, P. C. Paddock; Second Vice-President, Harry Brown; Secretary-Treasurer, R. J. Tozer.

Durable Goods Industries Committee

The Durable Goods Industries Committee, of which George H. Houston, president of the Baldwin Locomotive Works, is chairman, has held five meetings in Washington since March 8. In the meantime five subcommittees have been appointed. The subcommittees are: Hours and Wages Adjustment; Emergency Ways and Means of Stimulating Employment; Industrial Relations; Permanent Restoration and Stabilization of Employment in the Durable Goods Industries; Consideration of General Johnson's Twelve-Point Program.

The committee has also issued its first report dealing largely with the two proposed pieces of legislation—the Securities Exchange Act of 1934, and the Wagner Disputes Act.

Eastman Requests Study of Clearing House Plan

Investigation of subject as it relates to settlement of inter-road accounts is asked

A comprehensive memorandum dealing with the subject of a clearing house for the settlement of inter-road accounts of the railroads of the United States was sent by Co-ordinator Eastman on March 30 to the Regional Co-ordinating Committees representing the railroads with a request that they provide at once for a thorough study of the subject by an appropriate committee of finance and accounting officers. The memorandum was prepared at the co-ordinator's request by N. B. Haley of the Bureau of Finance of the Interstate Commerce Commission. In commenting on it Mr. Eastman said that the evidence seemed to him "to indicate definitely that there are very large possibilities of economy and efficiency in the adaptation of the clearing house plan to the railroads."

Mr. Haley's memorandum tells how the clearing house idea originated and how it is now applied in the banking industry, and then describes the experiments which have been made here and in England in applying the same idea to the railroad industry. It concludes with a number of suggested points which he thinks ought to be followed up in the study of the problem, although it is not intended to limit any inquiry to these points.

Mr. Haley's memorandum was supplemented by the following comment from O. C. Castle, director of the Section of Car Pooling:

"I am somewhat familiar with the first general experiment along this line which was conducted by the committee on Car Efficiency of the American Railway Association from 1907 to 1911. I was associated with Mr. Arthur Hale in the organization of the clearing house and during the later months of my connection with the clearing house, I had direct charge of the clearing feature. As stated in Mr. Haley's report no valid criticism was ever urged against the system and it could have been extended to cover all railroads but for the reluctance of some of the larger carriers to go along with the movement. The only explanation for this reluctance is that many of the debtor roads did not wish to commit themselves to a definite date of settlement and that some accounting and financial officers resented the introduction of innovations in their particular field by an operating organization such as the American Railway Association.

"In the event a freight car pool is organized the car hire settlement between pool members will automatically come under a clearing arrangement. If the pool is only partial however, some other plan will be necessary covering car hire accounts not covered by the pool. If the clearing is extended to include repairs, traffic balances, etc., the work would go considerably beyond the scope of the pool organization. In view of this, I can see no reason for delaying consideration of

this clearing house plan pending the development of our pool plans. This is something which in any event, should be worked out by accounting and financial officers and anything they develop can easily be co-ordinated with the settlement feature of the car pool."

Roads to Report Depreciation and Retirements Monthly

The Interstate Commerce Commission, by Division 4, on February 16 approved a modification in the monthly report of revenues and expenses of Class I steam railroads so as to show separately each month the amount of depreciation and the amount of retirements included in item 11, Maintenance of equipment, of the present form, beginning with the report for March, 1934. To avoid reprinting the forms for this year, it was requested that the information be shown as a footnote against item 11.

Equipment on Order

Class I railroads of the United States on March 1 had 5,019 new freight cars on order, according to reports received by the Car Service Division of the American Railway Association. On the same day last year, 1,974 new freight cars were on order and on the same date two years ago, there were 3,214 on order.

The railroads on March 1 also had 21 new steam locomotives on order and 90 electric locomotives.

In the first two months of 1934, the railroads installed 23 new freight cars, all of which were box cars. In the same period last year, 476 new cars were placed in service and for the same period two years ago, the total number installed was 870. While no new steam locomotives were placed in service in the first two months of 1934, reports showed that 4 new electric locomotives were installed. Freight cars or locomotives leased or otherwise acquired are not included in the above figures.

Arch-Bar Trucks

Interchange Rule 3, section t, paragraph 3, provides that, effective January 1, 1936, cars with arch-bar trucks will not be accepted from car owners. For a number of years the Mechanical Division of the A. R. A. has sent out an annual questionnaire to all railroads and owners of private-car-line equipment and from the responses has tabulated the condition of freight cars as regards type of truck—arch-bar or cast-steel side frame. A statement showing the kinds of trucks on interchange freight equipment as of January 1, 1934, has just been issued. This includes for railroad owned equipment, 219 replies, 2,251,071 interchange freight cars owned or controlled, of which 780,762 cars, or 34.7 per cent, were equipped with arch-bar trucks. From private car lines 196 replies were received. These showed 294,546 cars owned or controlled, of which 121,595, or 41.3 per cent, were equipped with arch-bar trucks. Combining railroad and private car-line equipment, the statement shows 2,545,625 cars owned or controlled, of which 902,357, or 35.4 per cent, were equipped with arch-bar trucks.

During the past four years there has been a slow, but steady, decrease in the number of arch-bar trucks. The tabula-

tion for January 1, 1930, showed 43.6 per cent of railway owned interchange freight equipment, 49.5 per cent of private-car-line equipment, and 44.2 per cent of all interchange equipment had arch-bar trucks.

Tie Stocks of Producers Show Further Increase

Reports filed with the Railway Tie Association by 14 companies supplying about 85 per cent of the ties produced by commercial firms show that the number of crossties held in stock by these companies on March 1 was greater than for any month since April, 1932. On March 1 these companies had 7,247,550 crossties in stock, an increase of 137,325, or 1.9 per cent, as compared with the previous month, and of 1,398,118, or 23 per cent, as compared with the same month a year ago. Tie stocks in the hands of these companies have thus increased continuously since last August when they reached the low point of 5,063,020 ties.

Of the ties available on March 1, 4,920,350, or 68 per cent, were 8 ft. long and 2,327,200 or 32 per cent, were 8 ft. 6 in. long, while 586,517 ties, or 8 per-cent were U-ties for use untreated, 4,456,060, or 62 per cent, were oak ties for treatment and 2,204,973 or 30 per cent, were other species for treatment.

Great Lakes Advisory Board

The Great Lakes Regional Advisory Board held its eleventh annual meeting at

Toledo, Ohio, on March 28, with a large attendance. The summary of the commodity reports indicates an increase during the current quarter of 27½ per cent, in freight loadings, compared with the movement one year ago. All reports show expected increases, except those on fruits and livestock. The principal increases indicated are: Automobiles, etc., 81 per cent; ore and concentrates, 32 per cent; iron and steel, 27 per cent; sugar, etc., 20 per cent; agricultural implements, etc., 20 per cent; machinery, etc., 13 per cent; fertilizers, 12 per cent; petroleum, etc., 11 per cent; cement, 10½ per cent.

The N.R.A. code of the trucking industry was explained in detail by Frank Schmidt, administrator for Ohio. An exhibit of containers, models, etc., was presented by Edward Dahill, of the Freight Container Bureau.

C. B. Tefft, Toledo, was re-elected president of the board.

Net Deficit For January \$11,799,985

Class I railroads in January had a net deficit after fixed charges of \$11,799,985, as compared with a deficit of \$29,709,107 in January, 1933, according to the Interstate Commerce Commission's monthly compilation of selected income and balance-sheet items. Total current liabilities at the end of the month amounted to \$1,143,505,779, while total current assets were \$978,638,193. The statement follows:

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 145 reports (Form IBS) representing 150 steam railroads

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of January 1934	For the month of January 1933	Income Items	For the — months of 1934 — months of 1933 — No cumulations —
\$30,928,873	\$13,585,004	1. Net railway operating income	
13,731,965	13,827,017	2. Other income	
44,660,838	27,412,021	3. Total income	
10,938,746	10,697,044	4. Rent for leased roads	
43,665,630	44,307,125	5. Interest deductions	
1,856,447	2,116,959	6. Other deductions	
56,460,823	57,121,128	7. Total deductions	
d 11,799,985	d 29,709,107	8. Net income	
		9. Dividend declarations (from income and surplus):	
1,864,329	685,306	9-01. On common stock	
442,222	279,912	9-02. On preferred stock	
		BALANCE-SHEET ITEMS	
		Selected Asset Items	Balance at end of January 1934 1933
		10. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	\$742,673,741 \$766,962,848
		11. Cash	282,959,308 272,772,332
		12. Demand loans and deposits	37,520,766 32,211,867
		13. Time drafts and deposits	45,030,472 35,138,636
		14. Special deposits	35,833,970 22,633,566
		15. Loans and bills receivable	7,971,311 10,717,027
		16. Traffic and car-service balances receivable	52,292,657 43,594,175
		17. Net balance receivable from agents and conductors	39,895,209 35,910,689
		18. Miscellaneous accounts receivable	137,070,356 133,222,801
		19. Materials and supplies	293,975,579 314,987,931
		20. Interest and dividends receivable	38,199,405 32,675,773
		21. Rents receivable	1,637,090 1,797,988
		22. Other current assets	6,252,070 9,539,896
		23. Total current assets (Items 11 to 22)	978,638,193 945,202,681
		Selected Liability Items	
		24. Funded debt maturing within six months*	273,524,128 228,610,160
		25. Loans and bills payable	334,812,368 302,273,676
		26. Traffic and car-service balances payable	65,189,415 57,550,925
		27. Audited accounts and wages payable	199,187,341 201,613,671
		28. Miscellaneous accounts payable	43,854,876 57,089,252
		29. Interest matured unpaid	226,258,861 161,333,552
		30. Dividends matured unpaid	8,389,374 9,009,861
		31. Funded debt matured unpaid	108,723,300 54,145,701
		32. Unmatured dividends declared	9,545,604 7,640,375
		33. Unmatured interest accrued	106,856,353 108,226,293
		34. Unmatured rents accrued	25,267,655 23,337,804
		35. Other current liabilities	15,420,632 10,764,459
		36. Total current liabilities (Items 25 to 35)	1,143,505,779 992,985,569

* Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

Ø Includes obligations which mature less than two years after date of issue.

d Deficit.

Forty Thousand Carloads Relief Shipments

Shipments of 40,824 carloads of food-stuffs, grains, blankets and coal for the needy unemployed were made by the Federal Surplus Relief Corporation from November, 1933, to March 15, 1934, inclusive, according to a statement issued by Harry L. Hopkins, president of the corporation and Federal Emergency Relief Administrator.

Pork shipments aggregated 105,082 tons; butter, 23,878 tons; lard, 5,279 tons; flour, 44,685 tons; dried apples, 442 tons and beans, 2,500 tons. Canned beef amounted to 9,027 tons; cereal foods, 6,564 tons; and cheese, 1,801 tons.

Oranges, 525,696 bags of them, totaled 592 carloads. There is also an item of 226,100 gallons of syrup, said to have been shipped in 62 carloads. The movement of coal totaled 22,012 carloads, aggregating 1,100,595 tons. Total shipments of feed grains amounted to 9,620,923 bushels; and finally, there were 287 carloads of blankets—1,032,304 blankets.

Revenues in Canada Improve Greatly

The Canadian Pacific had a marked expansion in both gross and net operating revenues in February. The month's gross at \$8,570,515 was \$1,473,627 ahead of February of last year, and as expenses were increased by only \$751,717 to \$7,751,994, the result was an increase in net, from \$96,611 to \$818,520, up \$721,909.

For the first two months of the year, gross of \$17,540,850 shows an increase of \$2,768,301 over the \$14,772,548 reported a year ago. In the same period, expenses rose by \$1,480,775 to \$15,833,341, leaving net for the two months of \$1,707,509, against \$419,983 in the like period of 1933, an increase of \$1,287,526.

Gross revenues of the Canadian National in February were \$11,525,217, an increase of \$2,069,994, over the \$9,455,223 reported a year ago. Operating expenses rose by \$934,471, to \$12,250,207, due to severe weather conditions and increased traffic, and there was a net deficit for the month on operations of \$724,990, compared with a deficit of \$1,860,512, a year ago.

For the first two months operating revenues showed an increase of \$3,908,982 over the revenues of the first two months of last year, \$23,087,794 comparing with \$19,178,812. Operating expenses showed an increase, totaling \$24,621,750 compared with \$22,946,748 in the preceding year. The net revenue deficit for the first two months of the year was \$1,533,956, or \$2,233,980 less than in 1933.

Reduced Rate Increases Passenger Revenues on C. & G.

As a result of two-cent rate, improved service and a campaign to secure traffic, the passenger revenues of the Columbus & Greenville increased 37.4 per cent during December, January and February. When the reduced passenger fares became effective, the railway increased its train service by one additional train between Winona and Greenville and inaugurated an intensive publicity campaign. The traffic increased immediately; the number of passengers carried in December, 1933, was

12,866, compared with 5,377 in December, 1932, or an increase of 139 per cent, which was sufficient to overcome the effect of the reduction in rates and produce an increase in the revenue compared with December, 1932, of \$7,675. Even more favorable results were obtained in January, 1934, and February.

The revenue passengers carried and the passenger revenues for December, 1933, and January and February, 1934, compared with the same months in the preceding years, follow:

REVENUE PASSENGERS HANDLED				
December, 1932	December, 1933	Increase	Per Cent	
5,377	12,866	7,489	139.27	
January, 1933	January, 1934			
3,108	11,521	8,413	270.68	
February, 1933	February, 1934			
4,558	9,869	5,311	116.52	
Total	13,043	34,256	21,213	162.64

PASSENGER REVENUE			
<i>December,</i> 1932	<i>December,</i> 1933	<i>Increase</i>	<i>Per Cent</i>
\$6,528	\$7,675	\$1,147	17.57
<i>January,</i> 1933	<i>January,</i> 1934		
\$3,322	\$5,258	\$1,936	58.26
<i>February,</i> 1933	<i>February,</i> 1934		
\$2,699	\$4,310	\$1,611	59.68
Total	\$12,549	\$17,243	\$4,694 37.40

Eastman Urges Better Division Arrangements

Co-ordinator Eastman has addressed a letter to the Regional Co-ordinating Committees referring to correspondence with a special committee of the Railway Accounting Officers' Association relative to re-audits of inter-line accounts and suggesting that a central committee of the carriers take up a study of the arrangements between the carriers for the division of joint rates with a view to corrective measures.

It appears, he said, that certain railroads have employed an independent, outside accounting agency to re-audit such accounts, this examination being conducted "after the records have been checked, audited, and re-audited both by the carrier client and its connections." The agency's review is said to be "in reality a seventh examination." Nevertheless, in most instances this "seventh examination" developed substantial errors amounting in the aggregate to a large amount of money.

"So far as the necessity and propriety of employing an independent, outside agency for this purpose are concerned, I am pursuing the matter with the Railway Accounting Officers' Association and find no present occasion for referring the subject to the Regional Co-ordinating Committees. However, it develops that the most important reason for the situation which has been disclosed by these re-audits is the excessive complexity and even uncertainty of the arrangements between the carriers for the division of joint rates. This is a subject to which I believe that the Regional Co-ordinating Committees may well give attention, for it appears to be a matter where the accounting officers have only a limited responsibility and where the major responsibility lies with the traffic officers.

"That the subject is not a new one is indicated by the attached copy of a paper entitled 'The Necessity for Simplified Divi-

sion Bases in connection with Interline Waybilling' which was read by C. E. Hildum, then Auditor of Freight Accounts of the Erie Railroad, before the Rules and Regulations Committees, Central Freight Association, at Chicago on January 9, 1917. Practices have somewhat changed since that paper was read, but it is still suggestive of practical corrective measures. I believe the matter to be one of great importance to the railroads, from the standpoint of economy and efficiency, and that it should be handled by a central committee of the carriers which can study it thoroughly and act aggressively with a view to early and definite correction.

"Will you not see that it receives such treatment?"

Merger in Canada Not Favored by Fullerton

(Continued from page 515)

In my opinion, such further sane—as contrasted with rash—economies are as possible under a policy of co-operation as under a policy of amalgamation. If the two railways are prepared whole-heartedly to join in the co-operation directed by Parliament the savings will be approximately as great as they would be under amalgamation.

"As to the alleged evils of political influences, everyone will admit that political interference can work great harm, and that it is highly desirable that those who are directing any great enterprise should be free to bring to the performance of their task whatever abilities they may have, untrammelled by a consideration of party politics. Let me say once for all that today the Canadian National Railways are just as free from having to consider matters from a political angle as is any railway in Canada, and it is the intention of myself and my fellow-trustees that this shall remain so. The Trustees, individually and as a body, are, for many reasons which it is not necessary here to state, opposed to anything in the way of amalgamation or unification involving the taking over of the Canadian National Railways by its competitor. It must, however, be kept in mind that throughout Canada there are people who favor amalgamation of all railways in the Dominion or, failing that, management under a single administration, and it would be a mistake on the part of those who disagree with them to underestimate their importance. Many of the arguments are forceful and appealing, and even if, when emanating from interested quarters, they are not characterized by any noticeable degree of modesty, they are not to be lightly dismissed.

"There is this to be said, that unless the position of all railways in Canada materially improves within the next few years many experiments, presently unpalatable and presently unacceptable, may have to be tried. It is for this reason that I appeal to every employee of the Canadian National Railways to devote the very best that is in him to the success of the railway. The trustees can do their part to ensure that no political interference, no foolish or insane policies, and no extravagance will interfere in the management of the railway, but the real success of the railway

depends upon the efforts put forth by the men who are in charge of the actual enterprise. I am sure that every man on the Canadian National Railways will make the success of the enterprise his first consideration and nothing should be countenanced which will embarrass the management or impair the efficiency of the system. In the management of the railway the trustees are not interested in race, religion or politics, but solely in the merit and ability of the men. Every man may expect from the trustees a fair deal. Merit, not favor, is the watchword."

Emergency Board Reports on D. & H. Wage Dispute

(Continued from page 514)

sent of the parties and with approval of the members of the Emergency Board, the provision of Section 10 of the Railway Labor Act for the maintenance of the status quo was waived, and the time for restoring the old agreements was fixed as of April 1, 1934.

The carrier would not accede to the second and third paragraphs of the proposal; but expressed its willingness to review upon presentation, through its regular prescribed channels, the seven major points or any of the listed cases in the strike ballot.

In view of this expression on the part of the carrier, and in order to afford the Brotherhood of Railroad Trainmen an opportunity to decide whether it wishes to prosecute claims arising since the termination of the experimental period, August 1, 1933, under the provisions of the old agreement, or under the Loree Plan, the remaining questions in difference between the parties were either withdrawn without prejudice or removed from further consideration before the present Emergency Board.

CONCLUSIONS

1. The board is in no position to express an opinion upon the merits or demerits of the Loree Plan. It does, however, feel justified in pointing out that "no machinery of contract and adjustment," as contemplated by the Railway Labor Act, has been established for the settlement of disputes upon the Delaware & Hudson. The several paragraphs of Section 2 of that Act are a unit; and, read together, they provide a definite procedure for joint effort in making and maintaining agreements respecting rates of pay, rules and working conditions; for the expeditious consideration and settlement of all controversies arising out of their interpretation and application; and for the prompt and just disposition of grievances, however they may arise. In case of a dispute, the questions in issue shall be "considered in conference between representatives designated by the carrier and the employees respectively, without interference, influence, or coercion" by either party over the choice of representatives by the other. The Board of Disciplining Officers of the Delaware & Hudson has an infelicitous title; it is the sole creation of the carrier, devoid of employee representation; and its composition fails to meet the bi-

partisan standards of the Act. Nor can it be justified by the second provision of Section 3 which grants to "an individual carrier and its employees the privilege of setting up such machinery of contract and adjustment as they may mutually establish"; for the board in existence fails to meet the requirement of mutuality. In short, while in all matters relating to rates of pay, rules and working conditions the principles underlying the Railway Labor Act are those of equality of bargaining power and industrial democracy, the only available tribunal to which disputes may be referred is under the entire control of the management.

2. The successful operation of Section 3 of the Railway Labor Act dealing with adjustment boards, or other machinery of contract and adjustment, depends upon whole-hearted compliance with its provisions. The record in this case does not disclose such compliance. It is the opinion of the board that these provisions of the Act, if not already mandatory, should be made so.

3. Emergency boards have formerly been instructed to investigate and report the facts pertaining to the controversy. In the instant case the board was authorized to "make every effort to adjust the dispute" upon the facts developed. The success with which this extension of authority has been attended seems a sufficient justification for thus enlarging the powers of Emergency Boards.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 2205, 150 Broadway, New York, N. Y.
 ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.
 AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.
 AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago, Ill.
 AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.
 AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 19-21, 1934, Hotel Sherman, Chicago, Ill.
 AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.
 AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 Federal St., Chicago, Ill.
 AMERICAN ELECTRIC RAILWAY ASSOCIATION.—(See American Transit Association.)
 AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.
 Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.
 Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Annual meeting, June 26-28, 1934, Hotel Knickerbocker, Chicago, Ill.
 Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
 Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 22-23, 1934, Hotel Washington, Washington, D. C.
 Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
 Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, June 12-14, 1934, Hotel Stevens, Chicago, Ill.

Division II.—Transportation.—G. W. Covert, 59 E. Van Buren St., Chicago, Ill.
 Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York, N. Y.
 Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.
 Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.
 Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.
 Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
 Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
 Equipment Painting Section.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
 Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.
 Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, May 22-24, 1934, Hotel Commodore, New York, N. Y.
 Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York, N. Y.
 Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.
 AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago, Ill.
 AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. A. Senter, Ind. Agt., N. C. & St. L. Ry., Nashville, Tenn. Annual meeting, June 20-22, 1934, Baltimore Hotel, Kansas City, Mo.
 AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.
 AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—J. L. James, L. & N. Employees' Magazine, Louisville, Ky.
 AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill. Exhibit by Tool Foremen Suppliers' Association.
 AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.
 AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York, N. Y. Railroad Division.—Marion B. Richardson, Ahrens & Richardson, 30 Church St., New York, N. Y. Spring Meeting, June 25-28, 1934, Denver, Colo.
 AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, September 24-28, 1934, Cleveland Public Auditorium, Cleveland, Ohio.
 AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, 1935, New York, N. Y.
 ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, May 16-18, 1934, Hotel Cleveland, Cleveland, Ohio.
 ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., 1519 Daily News Building, 400 W. Madison St., Chicago, Ill. Annual meeting, October, 1934, Chicago, Ill. Exhibit by Railway Electrical Supply Manufacturers' Association.
 ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, Transportation Building, Washington, D. C.
 BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—J. W. Shoop, The Lehon Company, Oakley Ave., 44th and 45th Sts., Chicago, Ill. Meets with American Railway Bridge and Building Association.
 CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.
 CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill.
 CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.
 CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.
 CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, Mo.—J. F. Brady Main and Barton Sts., St. Louis, Mo. Operation suspended indefinitely.
 CENTRAL RAILWAY CLUB OF BUFFALO.—M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second

Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Building, Chicago, Ill.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York, N. Y. Annual Meeting, November 12-15, 1934, Washington, D. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 S. Michigan Ave., Chicago, Ill.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section (See Safety Section, American Railway Association).

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—W. S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, Transportation Building, Washington, D. C. Annual meeting, June 26-29, 1934, Greenbrier Hotel, White Sulphur Springs, W. Va.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec.), First National Bank Building, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 16-18, 1934.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division and Motor Transport Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. R. A. Division I.

RAILWAY TIE ASSOCIATION.—A. S. Fathman, 1252 Syndicate Trust Building, St. Louis, Mo. Annual meeting, May 16-17, 1934, Cleveland Hotel, Cleveland, Ohio.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 18-20, 1934, Hotel Stevens, Chicago, Ill.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Drawer 24, M. P. O., St. Louis, Mo. Meetings temporarily suspended.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. R. A. Signal Section.

SOCIETY OF OFFICERS, EASTERN ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 6-7, 1934, Buffalo, N. Y.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Division V, Equipment Painting Section.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—N. A. Walford, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, first Friday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., Carbon & Carbide Building, Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 E. 98th St., Cleveland, Ohio.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Supply Trade

The Hercules Motors Corporation has re-established direct factory representation on the Pacific coast. **Oliver S. Kelly** will represent the company in that territory, with headquarters at San Francisco, Cal.

John L. Randolph, formerly vice-president of the Franklin Railway Supply Company, Chicago, has organized **John L. Randolph & Son**, with offices at 1017 McCormick building, Chicago, to engage in the sale of railway supplies.

H. D. Binks, who was president of the Binks Spray Equipment Company, Chicago, until 1929, has organized the **H. D. B. Corporation**, with general offices and plant at 900 North Spaulding avenue, Chicago, to manufacture spray guns and allied equipment.

John B. Campbell, who has been appointed general manager of the **Pettibone Mulliken Company**, Chicago, graduated from DePauw University in 1922 and in the same year entered the employ of Fairbanks, Morse & Co., Chicago. After holding positions in various departments,



John B. Campbell

he was placed in charge of the production control division of the plant at Beloit, Wis., from which position he resigned in 1932. In the same year he was appointed special representative of the receiver of the Pettibone Mulliken Company, which position he held until his recent promotion.

J. H. Bendixen, vice-president and manager of sales of the **Bettendorf Company**, Bettendorf, Iowa, has been

elected chairman of the board and first vice-president and manager of sales, and **E. J. Bettendorf**, secretary and treasurer, has been elected president, to succeed **J. W. Bettendorf**, deceased. Other officers elected are: **W. E. Bettendorf**, secretary; **J. L. Miclot**, assistant secretary; and **A. J. Bettendorf**, assistant treasurer.

Batt L. Spain, who has been for the past 24 years with the General Electric Company at the West Lynn, Mass., works as manager of turbo-blower sales, is now connected with the **Ingersoll-Rand Company** as manager of the turbo-blower department. He will be located at the general offices, 11 Broadway, New York. The transfer of Mr. Spain follows the acquisition of the turbo-blower business of the General Electric Company by the Ingersoll-Rand Company.

OBITUARY

Joseph H. Kummer, general sales representative of the Fort Pitt Malleable Iron Company, with headquarters at Pittsburgh, Pa., died of heart failure in New York on March 18. He was born in Detroit, Mich., on July 2, 1881, and at a very early age became associated with the Fort Pitt Malleable Iron Company.

Construction

CHICAGO & NORTH WESTERN.—A contract has been awarded to Colianni & Dire, Chicago, for the construction of a highway subway to carry S.B.I. Route 88 under the main track of the North Western at Langley, Ill. The structure will consist of a 40-ft. ballasted deck I-beam span carried on concrete abutments.

ERIE.—The New York Public Service Commission has approved as not excessive a low bid of \$84,441 submitted by Warren Brothers Roads Company, Cambridge, Mass., for the elimination of the Rockwell crossing of this road in the town of Horseheads, Chemung county, N. Y.

NEW YORK CENTRAL.—An order directing the elimination of the Main street crossing of this road at Patterson, Putnam county, N. Y., has been affirmed by the New York Public Service Commission. The estimated cost of the work is \$108,913.

NORTHERN PACIFIC.—This company has commenced work on a tie renewal program that will involve the insertion of a total of about 1,000,000 ties. Tie renewal operations have begun on the western end of the company's lines and will proceed eastward as the weather permits. Beginning April 1, the Northern Pacific's tie treating plant at Paradise, Mont., was placed in operation, while the plant at Brainerd, Minn., has been in operation for some time.

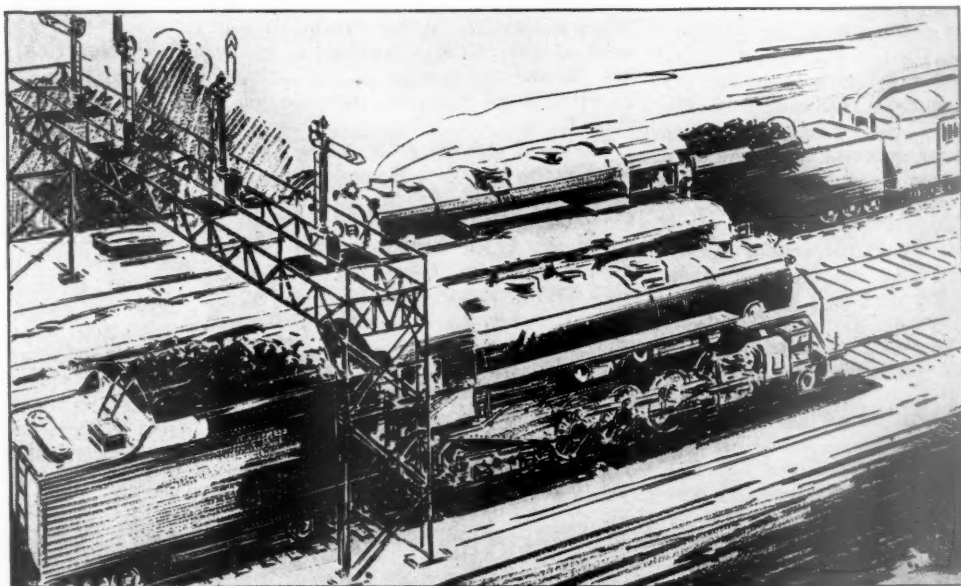
WABASH.—The United States District Court at St. Louis, Mo., has authorized the receivers of this company to expend \$84,000 for miscellaneous track material and \$15,440 for repairs to Bridge 59 at St. Charles, Mo.

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FASTER FREIGHT SERVICE

NEEDS SUPER-POWER LOCOMOTIVES



The shipper has been educated to expect faster service. Modern power is needed now if the new standards are to be continued.

Super-Power locomotives haul heavy freights at passenger speeds and do so at a low cost. But the older power now being called into service can neither maintain this pace nor yield the same operating return.

Super-Power locomotives are needed to supply the power required for today's operating standards.



Equipment and Supplies

P.W.A. Loans to Railroads

In announcing on April 3 the signing of loan contracts with three additional railroads, the Central of Georgia, the Chicago, Milwaukee, St. Paul & Pacific, and the Great Northern, the Public Works Administration pointed out that it had under contract \$166,989,000 of the \$199,607,800 allotted for work-creating loans to railroad companies. Several new allotments have been announced since the total reached the figure of \$199,607,800 but the sum has not been increased because several of the later allotments have been charged against the \$41,000,000 blanket allotment made for the purchase of rails, as it has become apparent that that amount will not be entirely needed for rails. The original allotment for rails, made in November, was \$51,000,000, but some of the railroads have ordered the rails without obtaining loans for the purpose.

The loan of \$1,716,000 to the Chicago, Milwaukee, St. Paul & Pacific will create 701,000 man-hours of employment for the company's shopmen at Milwaukee on the job of building 50 new passenger coaches and 25 baggage-express cars. Another contract, previously signed by Administrator Ickes, calls for a loan of \$2,317,000 to the Milwaukee to be used to purchase 20,000 tons of rail, 25,658 tons of fastenings, and for installing air-conditioning equipment in 22 passenger coaches and equipping 300 automobile cars with loading devices. The total to be advanced to the Milwaukee under both contracts is \$4,033,000.

The loan of \$120,000 to the receiver of the Central of Georgia is to be used to purchase 3,000 tons of rail and 142 tons of fastenings. A contract covering a second loan of \$600,000 to the Central of Georgia for the purchase of 200 new 70-ton coal cars is in process of preparation.

The loan of \$4,935,000 to the Great Northern will enable the company to give additional employment to its shop and track forces for which they will be paid approximately \$1,995,000 and to purchase new rails, fastenings and other materials costing \$2,940,000 which will create additional employment in heavy industries in many localities. Roadway improvements will cost \$3,108,000, of which \$985,000 will be paid to the company's track forces and \$2,123,000 will be spent for materials, including 20,000 tons of rails and the necessary joints, tie plates, spikes and other fastenings. The rolling stock to be repaired includes 6,374 freight cars, 316 locomotives and 138 passenger cars. This work will cost \$1,827,000, of which \$1,011,000 will be paid to Great Northern shopmen and \$816,000 spent for materials that they will use. Work on the 138 passenger cars will be done in the Great Northern's Jackson Street shops in St. Paul, where the shopmen will be paid approximately \$258,000. Work on five of the locomotives which are to have new boilers installed will be done in the company's

Superior, Wis., shops, where the shopmen will be paid approximately \$28,000.

A check for \$9,760,000 has been sent to the Pennsylvania to cover the third installment on the \$77,000,000 loan made to it by PWA for completing electrification of its line between Washington and Philadelphia and building 7,000 freight cars and 101 electric locomotives, and the first installment on a \$3,650,000 loan for the purchase of 100,000 tons of new rails. Previous advances to the Pennsylvania total \$7,619,000, and the new check brings the total to \$17,379,000. Another large installment probably will be required in about 30 days. Under the company's present schedule of construction all but \$5,000,000 of the entire \$80,650,000 loaned to it will be spent this year. The Pennsylvania will use \$1,928,000 of the amount advanced to pay for new rail, \$2,332,000 for carrying forward the freight car building program and \$5,510,000 for electrification work.

It was also announced that \$588,000 has been paid over to the Lehigh Valley, the second installment on a \$2,000,000 loan to enable the company to repair 60 locomotives and 2,000 freight cars in its shops at Sayre and Packerton, Pa. The first installment of \$300,000 was advanced on January 26, and the balance of the loan is expected to be drawn by the company by June 1.

The Gulf, Mobile & Northern has applied to the Interstate Commerce Commission for authority for the expenditure of \$1,000,000 allotted to it some time ago by the P. W. A. for the purchase of 150 box cars, 50 gondolas, 4 motor cars equipped with 600-horsepower Diesel engines, 2 passenger coaches, and 2 observation sleeping cars.

The P.W.A. has allotted \$300,000 additional to the New York, New Haven & Hartford for a four-car high-speed streamlined train, including two cars with Diesel motors, to operate between Boston, Mass., and Providence, R. I.

FREIGHT CARS

THE CHICAGO GREAT WESTERN is inquiring for 500 box cars of 50 tons' capacity.

PASSENGER CARS

THE CHILEAN STATE RAILWAYS, reported in the *Railway Age* of December 30 as inquiring for 20 first-class passenger coaches, has ordered 15 coaches from the Bethlehem Steel Company.

IRON AND STEEL

THE CLINCHFIELD has placed an order with the Tennessee Coal, Iron & Railroad Company, for 2,000 tons of rail, to be delivered during the month of June.

THE ERIE has placed orders for 29,987 tons of steel rail for delivery during 1934, as follows: Inland Steel Company, 2,000 tons; Illinois Steel Company, 5,857 tons; Carnegie Steel Company, 17,512 tons; and Bethlehem Steel Company, 4,618 tons.

THE NEW YORK CENTRAL LINES have placed orders for the purchase of 38,900

tons of steel rail, divided among the following companies: Bethlehem Steel Company, 19,510 tons; Illinois Steel Company, 17,490 tons; Carnegie Steel Company, 1,900 tons. The last named order, for 1,900 tons, is for the Pittsburgh & Lake Erie, which will pay for it from its own funds; the other orders will be financed by a loan from the Public Works Administration. Orders for track fastenings and accessories also were placed with the American Fork & Hoe Company, the Loraine Steel Company, the Illinois Malleable Iron Company, the Cleveland Frog & Crossing Company, the Weir Kilby Corporation, the Ramapo Ajax Corporation, the P. & M. Company, the William Wharton Jr. Company, the Woodings Forge & Tool Company, the Rail Joint Company, the Youngstown Sheet & Tube Company, the Weirton Steel Company, the Republic Steel Corporation, the Jones & Laughlin Steel Corporation and the Inland Steel Company.

MISCELLANEOUS

Pennsylvania Places \$3,500,000 Electrical Equipment Orders

The Pennsylvania has placed orders totaling \$3,500,000, for electrical equipment and insulators, in addition to 2,500,000 pounds of bare wire and cable. This material will be used in its electrification work now actively under way between New York, Philadelphia, Pa., Baltimore, Md., and Washington, D. C.

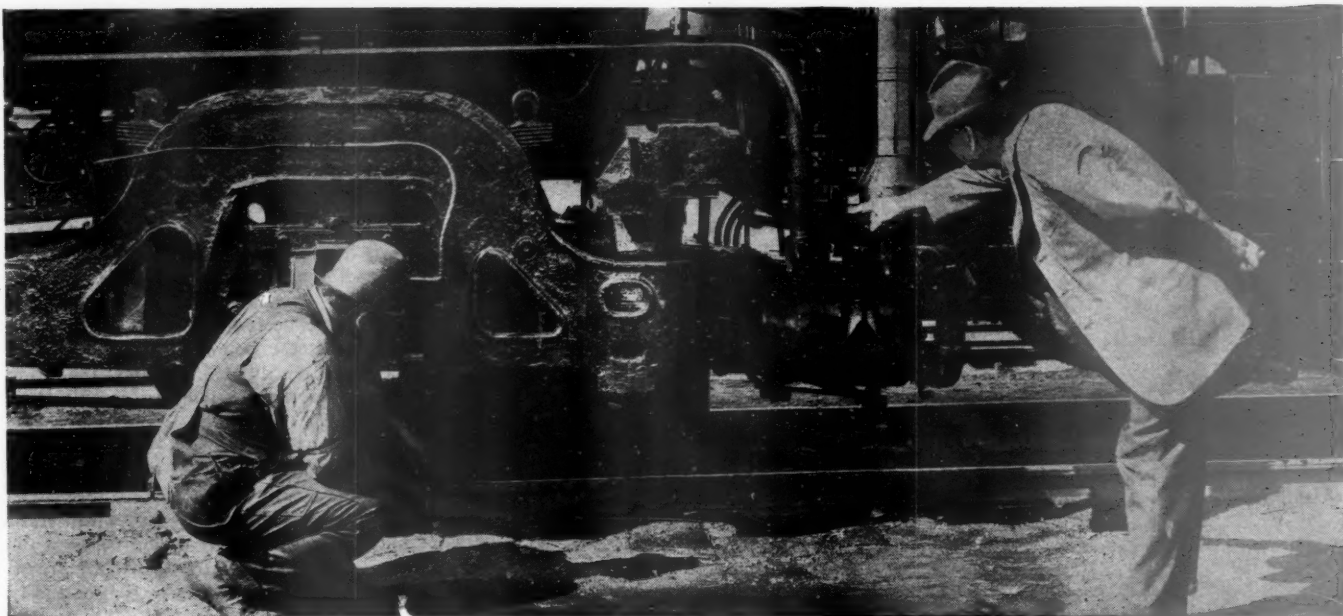
Since early in February the Pennsylvania has placed orders aggregating almost \$13,000,000 for materials and supplies used in connection with its extensive electrification and equipment building program financed by the Public Works Administration. These orders are expected to increase employment in the plants of electrical, wire and cable companies throughout the country.

The following companies shared in the orders for electrical apparatus and insulators: Allis-Chalmers Manufacturing Company, Milwaukee, Wis.; Condit Electrical Manufacturing Corporation, Boston, Mass.; General Electric Company, Philadelphia, Pa., Pittsfield, Mass., and Erie, Pa.; Lapt Insulator Company, Le Roy, N. Y.; Locke Insulator Company, Baltimore, Md.; Ohio Brass Company, Barberton, Ohio; Railway & Industrial Engineering Company, Greensburg, Pa.; Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., and Derry.

The orders for bare wire and cable were placed with the following companies: General Cable Corporation, Perth Amboy, N. J.; Graybar Electric Company, Worcester, Mass.; Anaconda Wire & Cable Company, Ansonia, Conn., and Waterbury; Bridgeport Brass Company, Bridgeport, Conn.; Copperweld Company, Glassport, Pa.; Phelps, Dodge Copper Products Corporation, Bay Way, N. J.; J. A. Roebling's Sons Company, Trenton, N. J., and Roebling.

More than 4,000 furloughed railroad employees have already gone back to regular work on the electrification project on the railroad, and men are being put to work on the jobs at the rate of 350 weekly.

Continued on next left-hand page



Include

BOOSTER Power

IN THE FUNDAMENTAL LOCOMOTIVE FORMULA

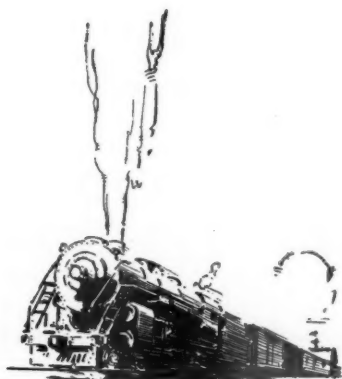
Just as the Superheater and Stoker have changed the fundamental locomotive formula on steam generation, so, too, The Locomotive Booster has changed it on tractive effort.

When purchasing new locomotives for any service determine the power requirements for both high and low speeds, then meet these requirements with an engine having the minimum weight on drivers.

Include The Locomotive Booster in the fundamental formula by which the locomotive is figured, using smaller cylinders in combination with Booster power to obtain the desired draw bar pull. The smaller cylinders together with a corresponding lightening of other parts mean lower maintenance costs.

The Booster is concentrated power; economical power—equivalent to that of an extra pair of drivers.

It is the most economical way of obtaining tractive power. Without it, far greater weight must be built into the locomotive, to be hauled around constantly in order to supply power that is only needed in starting and at slow speeds.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK

CHICAGO

MONTREAL

Financial

BANGOR & AROOSTOOK.—Annual Report.—The annual report of this company for 1933 shows net income, after interest and other charges, of \$993,576, as compared with net income of \$701,493 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$5,805,512	\$5,911,878	—\$106,366
Maintenance of way	902,177	996,876	—94,698
Maintenance of equipment	996,080	1,110,199	—114,119
Transportation	1,289,200	1,447,857	—158,657
TOTAL OPERATING EXPENSES	3,526,442	3,926,588	—400,146
Operating ratio	60.74	66.42	—5.68
NET REVENUE FROM OPERATIONS	2,279,069	1,985,290	+293,780
Railway tax accruals	517,857	501,158	+16,699
Railway operating income	1,760,346	1,484,080	+276,266
Hire of freight cars—Dr.	6,593	9,073	—2,480
Non-operating income	65,621	57,809	+7,812
GROSS INCOME	1,825,967	1,541,888	+284,079
Interest on funded debt	800,152	807,885	—7,733
NET INCOME	\$993,576	\$701,493	+\$292,083

BOSTON & MAINE.—Annual Report.—The 1933 annual report of this company shows net income, after interest and other charges, of \$321,571, a decrease of \$479,089 as compared with net income for 1932. Selected items from the income statement follow:

	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	\$41,877,369	—\$3,210,384
Maintenance of way	4,884,206	—620,737
Maintenance of equipment	6,554,891	—418,944
Transportation	16,146,334	—1,143,577
TOTAL OPERATING EXPENSES	30,389,875	—2,553,793
Operating ratio	72.57	—
NET REVENUE FROM OPERATIONS	11,487,494	—656,591
Railway tax accruals	2,563,332	—303,644
Railway operating income	8,922,779	—351,623
Hire of freight cars—Dr.	1,684,025	+11,404
NET RAILWAY OPERATING INCOME	7,068,315	—298,028
Non-operating income	1,091,440	—230,655
GROSS INCOME	8,151,028	—526,488
Rent for leased roads	1,243,211	+101,571
Interest on funded debt	*5,750,210	—398,730
TOTAL DEDUCTIONS FROM GROSS INCOME	7,829,457	—47,399
NET INCOME	\$321,571	—\$479,089

* Interest amounting to \$155,491 for 1933 and \$149,577 for 1932 accrued on bonds held in Sinking Fund is included in account "Income Applied to Sinking Funds".

CHICAGO GREAT WESTERN.—P.W.A. Loan.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,200,000 of 4 per cent equipment trust certificates in connection with a loan from the Public Works Administration.

CHICAGO, ROCK ISLAND & PACIFIC.—Bond Payment.—The hearing on the petition of the Bankers Trust Company as trustees, seeking payment in gold of interest and principal on Chicago, Rock

Island & Pacific general mortgage bonds and also the segregation of earnings of the lines covered by the mortgage for the benefit thereof, was continued to April 3 by Federal Judge Wilkerson on March 29. The petition of the mortgage trustees also asked that the bonds be recognized as a prior lien ahead of all creditors, including the Reconstruction Finance Corporation. Grouped with this petition are others of the R. F. C. and the Protective committee of Choctaw, Oklahoma & Gulf first mortgage bonds. The R. F. C. objects to the gold clause and seeks to defeat its preferred position.

DELAWARE & HUDSON.—New Director.—William A. Anderson has been elected a director of this company to succeed Edward D. Duffield.

LOUISVILLE & NASHVILLE.—New Director.—At the annual meeting of the stockholders of this company at Louisville, Ky., on April 4, Norman James of Baltimore, Md., was elected a director, succeeding E. W. Sheldon of New York, who died in February.

NEW YORK CENTRAL.—Securities.—This company has filed with the Interstate Commerce Commission a supplemental application for authority to pledge as collateral for \$52,500,000 of promissory notes to bankers or other private lenders any of the bonds for the issuance of which it recently asked authority. The company has also applied for authority to issue \$2,500,000 of promissory notes covering a loan from the Public Works Administration for rails and fastenings and for authority to pledge as collateral for the notes \$4,100,000 of refunding and improvement 5 per cent bonds.

NEW YORK, NEW HAVEN & HARTFORD.—Annual Report.—The 1933 annual report of this company shows net deficit, after interest and other charges of \$4,853,832, compared with net deficit of \$393,047 in 1932. Selected items from the income statement follow:

	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	\$67,224,751	—\$7,748,501
Maintenance of way	7,882,880	—1,444,832
Maintenance of equipment	11,305,146	—21,749
Transportation	25,083,690	—1,792,608
TOTAL OPERATING EXPENSES	49,227,027	—3,758,180
Operating ratio	73.23	+2.56
NET REVENUE FROM OPERATIONS	17,997,724	—3,990,321
Railway tax accruals	4,445,005	—355,072
Railway operating income	13,506,086	—3,649,770
Hire of freight cars—Dr.	1,825,903	+3,448
Joint facility rents	3,996,186	—112,526
NET RAILWAY OPERATING INCOME	7,695,427	—3,547,940
Non-operating income	3,940,550	—864,379
GROSS INCOME	11,635,977	—4,412,319
Rent for leased roads	2,782,067	—6,806
Interest on funded debt	11,532,630	—118,134
TOTAL DEDUCTIONS FROM GROSS INCOME	16,489,809	48,466
NET INCOME	*\$4,853,832	—4,460,785

* Deficit.

PENNSYLVANIA.—Bonds.—The Interstate Commerce Commission has authorized this company and the Connecting Railway to reduce the interest rate from 5 per cent to 4 per cent on \$934,000 of first mortgage bonds

of the latter company which the Pennsylvania owns and the P.R.R. has been authorized to sell the bonds to Edward B. Smith & Co., Philadelphia, Pa., at 98.18, making the annual basis approximately 4.14 per cent. A reduction from 5 to 4½ per cent in the interest rate on \$1,200,000 of Northern Central general and refunding mortgage bonds has been authorized to be sold to Kuhn, Loeb & Co., at 100.375, making the annual rate 4.48 per cent. The interest rate on \$750,000 of Delaware R.R. first mortgage bonds is to be reduced from 5 per cent to 4 per cent, the bonds to be sold to Kuhn, Loeb & Co. at 94½, making the annual rate approximately 4.28 per cent.

QUEBEC EXTENSION.—R.F.C. Loan.—This company, organized to build a line of 112 miles from Washburn, Maine, to the international boundary at Lac Frontier, has applied to the Reconstruction Finance Corporation for a loan of \$3,300,000 for the construction of a 90-mile section of the line from Portage, Me., to St. John's River crossing and to Lac Frontier. Richard H. Wheeler, of New York City, is president of the company.

ST. LOUIS-SAN FRANCISCO.—Abandonment.—The Interstate Commerce Commission has authorized this company and its trustees to abandon branch lines in Jasper county, Mo., and Cherokee county, Kans., as follows: Prosperity branch, 3.45 miles; 0.22 mile of its Carterville branch in Webb City; Rex Branch Jct. to the southerly part of Webb City, 4.9 miles; Galena to Hero Mine Spur, 3.4 miles; 1.1 miles of Leadville Hollow Spur; 0.79 mile of its Duenweg branch.

SOUTHERN PACIFIC.—Annual Meeting.—The annual meeting of the stockholders of this company was held on April 4 at Spring Station, Woodford county, Ky. New directors were elected as follows: George E. Roosevelt of Roosevelt & Son, New York; Deering Howe of Shearman & Sterling, New York; and Ben C. Day, general counsel of the company—these filling vacancies occasioned by the death of Melvin A. Traylor and the resignation of Ogden L. Mills and Chauncey McCormick.

SUPERIOR & SOUTHEASTERN.—Abandonment.—The Interstate Commerce Commission has authorized this company to abandon operation as to interstate and foreign commerce of its line extending southward from Loretta, Wis., 22 miles, together with a 2-mile branch.

Average Prices of Stocks and of Bonds

	Last Apr. 3	Last week	Last year
Average price of 20 representative railway stocks.	46.34	44.63	23.05
Average price of 20 representative railway bonds.	78.33	77.77	52.53

Dividends Declared

Albany & Vermont.—\$1.50, payable May 15 to holders of record May 1.
Elmira & Williamsport.—\$1.15, semi-annually, payable May 1 to holders of record April 20.
Lehigh & Hudson River.—\$1.00, payable March 31 to holders of record March 15.
Montgomery & Erie.—17½¢, semi-annually, payable May 10 to holders of record April 10.
Philadelphia & Trenton.—\$2.50, quarterly, payable April 10 to holders of record March 31.
Pittsburgh, Bessemer & Lake Erie.—75¢, semi-annually, payable October 1 to holders of record September 15.

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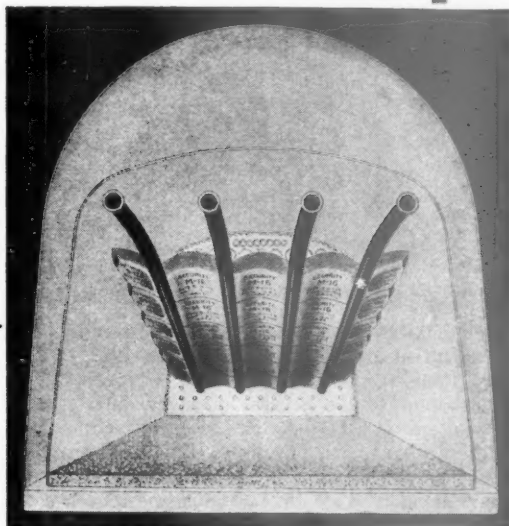
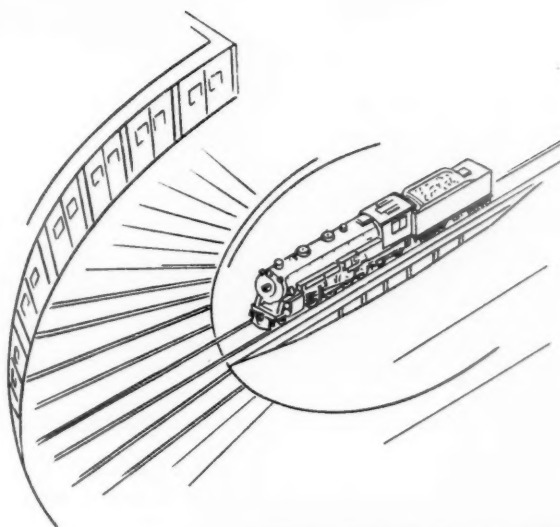
Anything LESS Than A COMPLETE ARCH Is False Economy

To let the desire for reduced inventory result in a locomotive leaving any roundhouse without a full set of Arch Brick is poor economy.

Even a single missing Arch Brick will soon waste many times its cost in fuel and in locomotive efficiency.

To spend the fuel dollar efficiently, every locomotive Arch must be maintained 100%.

Be sure your stocks on hand are ample to provide fully for all locomotive requirements, so that locomotive efficiency may be maintained.



There's More To
SECURITY ARCHES
Than Just Brick

**HARBISON-WALKER
REFRACTORIES CO.**
Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
*Locomotive Combustion
Specialists* * * *

Railway Officers

EXECUTIVE

William Walliser, vice-president in charge of personnel of the Chicago & North Western, with headquarters at Chicago, has retired after 51 years of service with this company.

H. J. German has resumed his duties as president of the Montour, with headquarters at Pittsburgh, Pa. Mr. German had served as eastern regional director for the federal co-ordinator of transportation since July, 1933.

E. Thomason, vice-president and general manager of the Piedmont & Northern, with headquarters at Charlotte, N. C., has been elected president of the road, with the same headquarters, succeeding **W. S. Lee**, deceased.

M. E. Pangle, whose appointment as assistant to the president in charge of personnel on the Chicago & North Western, at Chicago, was noted in the *Railway Age* of March 31, is 59 years old and was born at Geneva, Neb. He entered the service of the Chicago & North Western in 1896 as a freight brakeman at Chadron, Neb., and served successively as a conductor and trainmaster at Chadron and trainmaster at Norfolk, Neb., until 1908



M. E. Pangle

when he was advanced to division superintendent at the latter location. In 1922, Mr. Pangle was transferred to Chicago as assistant to the general manager, later serving as assistant to the vice-president with the same headquarters. In 1925 he returned to Norfolk as assistant general superintendent, Lines West, which position he was holding at the time of his recent appointment as assistant to the president.

G. F. Butler, who has been appointed vice-president in charge of traffic of the Norfolk & Western with headquarters at Roanoke, Va., as reported in the *Railway Age* of March 31, was born on August 24, 1877, in Richmond, Va. He first entered the service of the Norfolk & Western as messenger and clerk in July, 1891, in

the office of the freight claim agent. In December, 1895, he became clerk in the freight traffic department at Roanoke, being advanced to soliciting freight agent at Chicago, in October, 1902. Mr. Butler became traveling freight agent with headquarters at Roanoke, on October 1, 1907, later serving successively as chief rate



G. F. Butler

clerk, chief clerk to the general freight agent, and chief clerk to the freight traffic manager. He was appointed assistant general freight agent in December, 1917, and in June, 1922, became general freight agent. He was further advanced to the position of freight traffic manager in February, 1927, and in June, 1931, he was appointed general traffic manager, the position he held at the time of his recent promotion.

OPERATING

C. A. Pinkerton, general superintendent of the Detroit & Mackinac, with headquarters at Tawas City, Mich., has had his title changed to general manager.

C. A. Gordon, assistant superintendent on the Atchison, Topeka & Santa Fe at Chicago, has been promoted to superintendent of terminals at the same point, succeeding **C. E. Taylor**, deceased.

W. T. Gill, assistant to general manager of the Piedmont & Northern, with headquarters at Charlotte, N. C., has been appointed general manager, with the same headquarters, and the position of assistant to general manager has been abolished.

ENGINEERING AND SIGNALING

The following engineering department changes have been announced by the New York Central: **J. H. Kelly**, division engineer of the River division, with headquarters at Weehawken, N. J., has been appointed division engineer of the Eastern division, with headquarters at New York, succeeding **F. S. Hunt**, who has been retired on pension after 32 years of service. **T. P. Soule**, supervisor of bridges and buildings on the Mohawk division, with headquarters at Albany, N. Y., has been

appointed general supervisor of bridges and buildings, with headquarters at New York, succeeding **J. N. Grim**, who has been appointed division engineer at Weehawken, replacing Mr. Kelly. **E. E. Tanner**, formerly assistant supervisor of bridges and buildings on the Buffalo division, with headquarters at Rochester, N. Y., will succeed Mr. Soule and **William Cavanaugh**, assistant supervisor of bridges and buildings on the Syracuse division at Rochester, will replace Mr. Tanner.

A. H. Whisler, track supervisor on the Eastern region of the Pennsylvania, with headquarters at Milton, Pa., has been assigned to the office of the chief engineer maintenance of way at Philadelphia, Pa. **L. A. Evans**, assistant supervisor on the Philadelphia Terminal division, has been appointed acting supervisor at Milton. **W. G. Salmonson**, acting supervisor telegraph and signals of the Delmarva division has been transferred to the chief engineer's department at Baltimore, Md.

SPECIAL

Joseph J. Brennan has been appointed superintendent of special service of the Eastern Lines of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., succeeding **Harry B. Baker**, who has been assigned to other duties.

OBITUARY

James E. King, engineer maintenance of way of the Chesapeake & Ohio, with headquarters at Richmond, Va., died suddenly of a heart attack at his home in that city on March 29. Mr. King was born at Hurricane, W. Va., on March 1, 1884. He was educated in the public schools of Barboursville, W. Va., and Morris-Harvey College and entered the service of the C. & O. in September, 1900, as carpenter at Huntington, W. Va. In

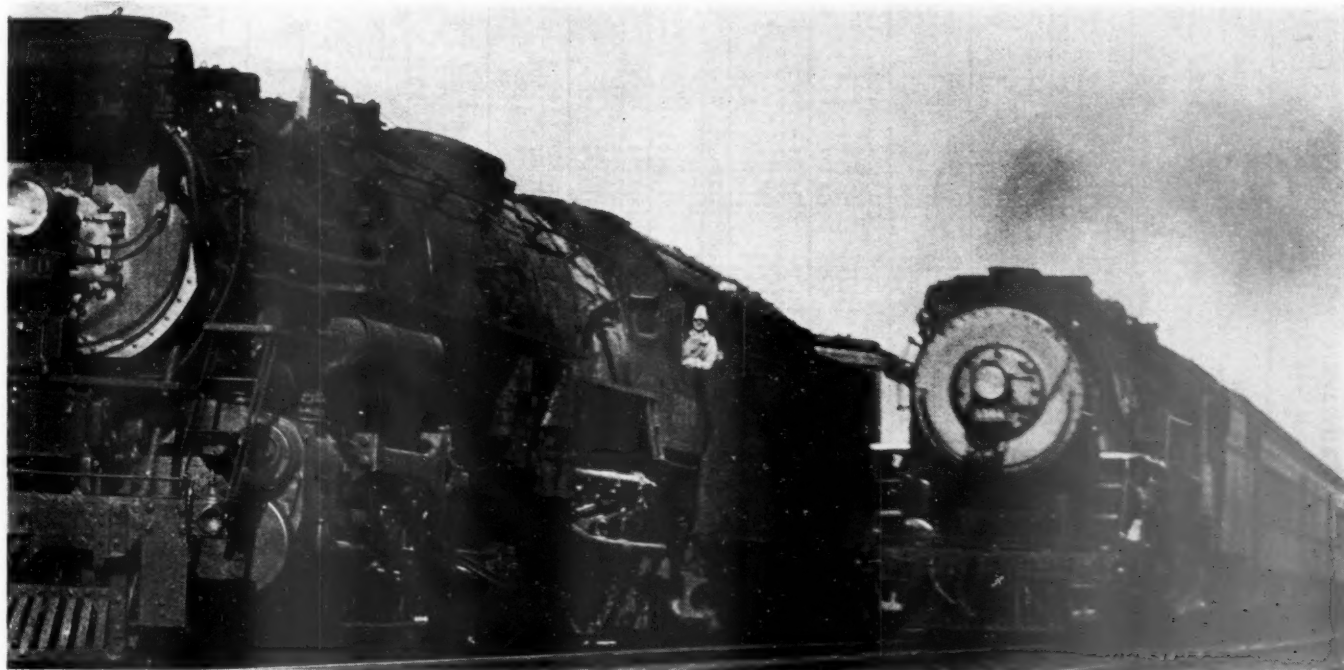


James E. King

March, 1906, Mr. King was appointed carpenter foreman at the same point and two years later he became roadman. He was appointed assistant engineer at Huntington in June, 1909, and the following year he was appointed assistant engineer maintenance of way at that point. In

(Continued on page 529)

Reclaiming Waste Heat Pays BIG Dividends



These locomotives are equipped with waste heat reclaimers—Elesco feed water heaters.

THE business depression has forced many to resort to various means of "reclamation" . . . some of which have paid satisfactory dividends.

But there is one form of reclamation which always pays substantial returns day in and day out . . . the reclamation of waste heat on steam locomotives. This is accomplished by preheating the feed water with exhaust steam; thereby reclaiming heat that otherwise would

be wasted to the atmosphere.

Waste heat reclamation, by effecting fuel saving and increased sustained boiler capacity, returns approximately 33 $\frac{1}{3}$ per cent on the cost of the equipment . . . admittedly big dividends on the capital invested.

Such returns are being realized today by railroads all over the country through use of the Elesco feed water heater.

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street
NEW YORK



Peoples Gas Building
CHICAGO

Canada: The Superheater Company, Limited, Montreal
A-865

Superheaters - Feed Water Heaters - Exhaust Steam Injectors - Superheated Steam Pyrometers - American Throttles

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1934

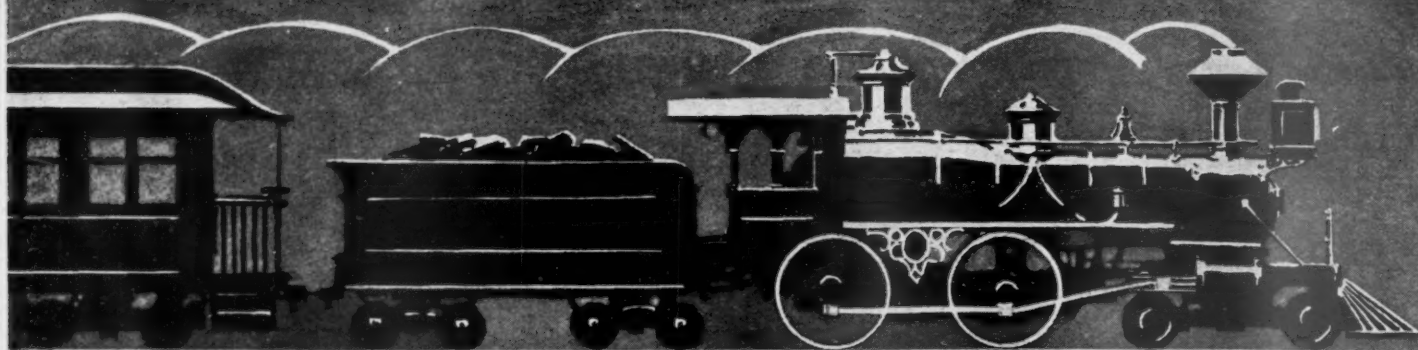
Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net operating income, 1933
		Freight	Passenger	Total	Misc.	Way and structures	Maintenance of equipment	Traffic	Trans-portion					
Akron, Canton & Youngstown.....	Feb. 171	\$138,726	\$26	\$138,752		\$12,094	\$10,846	\$7,252	\$45,563	56.5	\$64,484	\$53,309	\$38,314	\$13,961
Alton.....	Feb. 171	261,312	73	261,385		278,161	22,954	18,885	88,350	60.5	109,811	88,663	60,309	26,503
Alton.....	Feb. 950	641,360	117,325	758,685		824,916	148,254	97,549	388,624	79.8	180,868	109,846	20,452	7,504
Alton.....	Feb. 950	1,327,601	245,275	1,572,876		1,661,137	273,883	1,849,744	813,334	79.6	377,331	235,908	23,064	38,834
Atchison, Topeka & Santa Fe.....	Feb. 9,551	5,600,025	781,654	6,381,679		783,049	1,851,024	292,620	2,628,974	83.8	1,141,122	390,382	446,359	462,378
Atchison, Topeka & Santa Fe.....	Feb. 9,551	11,370,261	1,688,087	13,058,348		1,570,556	3,874,002	597,270	5,529,835	85.3	2,126,707	576,414	687,667	582,800
Atchison, Topeka & Santa Fe.....	Feb. 9,551	718,460	33,116	751,576		818,767	241,675	47,782	843,249	103.0	-24,482	-107,358	-194,703	-221,776
Atchison, Topeka & Santa Fe.....	Feb. 9,551	1,500,819	76,674	1,577,493		1,716,482	498,902	96,238	718,191	100.7	-12,317	-177,604	-354,935	-262,292
Panhandle & Santa Fe.....	Feb. 1,878	512,224	18,539	530,763		84,316	139,990	18,021	382,762	80.7	109,485	65,295	7,919	25,910
Panhandle & Santa Fe.....	Feb. 1,878	1,060,961	42,774	1,103,735		1,191,156	292,812	35,005	881,343	80.7	268,728	180,195	28,760	3,305
Atlanta & West Point.....	Feb. 93	74,135	15,494	89,629		111,894	22,748	6,624	44,863	89.8	11,434	4,233	5,920	29,108
Atlanta & West Point.....	Feb. 93	154,060	32,228	186,288		32,785	47,160	13,908	94,023	91.1	20,088	5,685	15,879	59,814
Western of Alabama.....	Feb. 133	78,569	16,236	94,805		19,418	28,887	6,644	40,919	95.8	4,553	-3,444	2,221	-14,273
Atlanta Birmingham & Coast.....	Feb. 639	162,816	33,725	196,541		37,328	58,952	13,664	83,329	94.8	11,880	3,137	6,470	16,478
Atlanta Birmingham & Coast.....	Feb. 639	202,948	4,310	207,258		38,928	51,881	21,309	93,393	95.9	9,828	2,553	18,623	49,245
Atlanta Birmingham & Coast.....	Feb. 639	410,812	8,433	419,245		78,014	107,522	42,658	189,520	98.4	7,619	-17,450	-7,323	-88,101
Atlantic Coast Line.....	Feb. 5,145	2,728,047	760,862	3,488,909		411,429	618,817	112,339	1,294,080	65.8	1,361,170	960,556	807,119	566,353
Atlantic Coast Line.....	Feb. 5,145	5,631,725	1,310,934	6,942,659		1,273,521	2,512,335	252,729	2,650,335	68.1	2,515,596	1,714,338	1,439,554	1,102,469
Charleston & Western Carolina.....	Feb. 342	163,577	1,154	164,731		22,842	20,545	3,759	51,336	62.0	64,220	47,720	43,545	14,080
Baltimore & Ohio.....	Feb. 6,384	9,314,885	680,210	10,000,095		855,663	2,548,807	343,062	3,868,400	77.2	2,434,698	1,755,970	1,423,582	1,244,338
Baltimore & Ohio.....	Feb. 6,384	18,486,404	1,445,926	19,932,330		1,701,384	5,172,537	702,090	7,843,188	78.4	4,596,093	3,228,784	2,648,493	2,815,885
Staten Island Rapid Transit.....	Feb. 23	68,294	74,789	143,083		11,271	12,552	1,698	81,384	80.9	27,763	12,513	-6,726	-9,911
Bangor & Aroostook.....	Feb. 603	556,200	36,835	593,035		16,574	25,542	3,122	163,777	81.3	25,631	23,124	-12,402	-15,535
Bangor & Aroostook.....	Feb. 603	1,169,021	72,989	1,242,010		50,777	88,961	4,365	144,484	61.0	238,152	188,741	172,016	225,878
Bangor & Aroostook.....	Feb. 603	336,126	832	336,958		55,440	256,950	10,618	111,727	58.8	528,017	428,183	386,337	437,537
Besemer & Lake Erie.....	Feb. 225	635,667	1,807	637,474		652,415	515,592	21,704	223,006	136.2	-124,604	-135,897	-112,327	-154,046
Boston & Maine.....	Feb. 2,081	2,240,672	607,450	2,848,122		606,960	543,504	52,763	1,439,326	84.5	516,046	332,039	138,046	409,579
Burlington-Rock Island.....	Feb. 2,081	4,777,200	1,220,608	5,997,808		973,821	1,288,253	111,279	2,952,597	81.6	1,283,985	916,901	544,511	644,047
Burlington-Rock Island.....	Feb. 2,081	54,604	830	55,434		9,919	13,046	3,151	34,251	113.7	-8,067	-12,870	-22,890	-17,991
Burlington-Rock Island.....	Feb. 2,081	123,682	1,644	125,326		18,977	26,048	6,397	73,734	104.9	-6,461	-16,074	-36,781	-29,091
Cambria & Indiana.....	Feb. 37	89,806	.....	89,806		4,639	35,420	384	12,161	66.54	30,117	14,426	83,875	86,667
Canadian Pacific Lines in Maine.....	Feb. 233	189,891	190,275	380,166		10,866	70,857	814	24,560	64.07	68,374	35,002	181,162	191,625
Canadian Pacific Lines in Maine.....	Feb. 233	13,446	236,976	250,422		41,360	8,853	8,552	95,542	79.9	47,468	40,433	17,868	34,104
Canadian Pacific Lines in Maine.....	Feb. 233	416,023	28,383	444,406		63,803	78,959	18,743	179,621	76.8	106,469	92,434	47,483	57,071
Canadian Pacific Lines in Vermont.....	Feb. 85	44,598	9,521	54,119		65,564	20,238	4,005	55,230	148.7	-31,945	-37,059	-53,676	-47,138
Central of Georgia.....	Feb. 85	104,036	21,602	125,638		27,490	40,126	7,982	194,007	130.2	-45,027	-55,241	-87,885	-97,993
Central of Georgia.....	Feb. 1,926	866,197	104,705	970,902		107,793	245,520	48,897	67,690	81.3	207,859	134,598	130,035	65,888
Central of Georgia.....	Feb. 1,926	1,717,507	192,248	1,909,755		215,301	498,017	98,818	852,955	83.3	363,647	216,205	130,035	-174,072
Central of New Jersey.....	Feb. 689	1,981,612	333,558	2,315,170		147,351	389,254	39,563	979,267	67.6	794,752	611,097	490,157	395,952
Central of New Jersey.....	Feb. 689	4,012,644	676,169	4,688,813		256,324	757,561	80,388	1,951,537	65.5	1,712,530	1,374,547	1,164,371	2,789,951
Central of New Jersey.....	Feb. 455	293,189	37,191	330,380		54,871	88,049	12,751	190,762	100.7	-2,530	-18,599	-27,516	-7,457
Central of New Jersey.....	Feb. 455	656,363	85,891	742,254		782,975	182,461	26,544	395,076	96.6	26,412	-5,587	-23,452	-20,018
Chesapeake & Ohio.....	Feb. 3,121	8,102,930	182,489	8,285,419		834,030	1,694,031	159,640	1,898,528	56.9	3,671,934	2,811,353	2,789,951	2,404,011
Chesapeake & Ohio.....	Feb. 3,121	16,233,981	374,999	16,608,980		1,735,994	3,639,317	317,015	3,856,630	57.5	7,265,210	5,536,969	5,469,219	4,739,989
Chicago & Eastern Illinois.....	Feb. 938	856,452	74,525	930,977		116,335	191,579	48,013	433,204	82.9	182,636	92,201	-36,826	-70,217
Chicago & Eastern Illinois.....	Feb. 938	1,690,648	157,084	1,847,732		237,422	376,570	98,160	867,900	82.9	351,488	165,998	-77,925	-210,156
Chicago & Illinois Midland.....	Feb. 131	239,596	1,015	240,611		24,974	55,078	14,926	65,813	71.9	69,241	60,602	59,952	50,510
Chicago & Illinois Midland.....	Feb. 131	502,738	2,070	504,808		50,832	110,850	29,956	135,471	69.3	159,083	139,026	70,647	70,647
Chicago & North Western.....	Feb. 8,442	4,172,553	529,056	4,701,609		538,041	1,950,018	143,970	2,259,680	82.5	933,920	382,825	168,005	-484,928
Chicago & North Western.....	Feb. 8,442	8,678,894	1,127,242	9,806,136		1,060,121	2,421,590	287,944	4,676,171	81.3	2,076,802	973,802	588,489	-898,604
Chicago, Burlington & Quincy.....	Feb. 9,182	4,746,927	393,273	5,140,200		462,976	978,920	182,359	2,164,404	70.8	1,691,036	1,110,527	814,040	181,116
Chicago, Burlington & Quincy.....	Feb. 9,182	9,837,085	855,495	10,692,580		757,779	2,338,576	369,612	4,527,568	71.2	3,462,907	2,292,629	1,723,205	301,957
Chicago Great Western.....	Feb. 1,518	973,244	29,258	1,002,502		151,004	184,657	49,372	450,993	82.2	191,032	136,373	-31,406	-174,717
Chicago Great Western.....	Feb. 1,518	2,023,441	64,529	2,087,970		303,992	371,180	103,291	92,313	80.8	428,874	319,837	-42,108	-282,022
Chicago, Indianapolis & Louisville.....	Feb. 644	457,316	34,347	491,663		44,275	137,828	23,276	245,241	86.2	76,641	40,906	-48,385	-52,612
Chicago, Indianapolis & Louisville.....	Feb. 644	942,925	74,383	1,017,308		90,180	274,452	47,913	969,234	80.1	183,846	112,895	-143,211	-143,211
Chicago, Milwaukee, St. Paul & Pacific.....	Feb. 11,201	5,281,125	299,933	5,581,058		580,128	1,405,128	183,059	2,536,703	84.1	1,235,591	638,565	264,090	344,092
Chicago, Milwaukee, St. Paul & Pacific.....	Feb. 11,201	11,101,225	646,459	11,747,684		1,243,499	2,791,582	373,140	5,339,178	79.2	2,713,317	1,518,940	687,802	-663,560

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from operation	Operating income	Net railway operating income	Net ry. operating income, 1933
		Freight	Passenger	Total	Maintenance of way and structures	Traffic	Trans- portation	General	Total					
Chicago, Rock Island & Pacific.....Feb.	7,612	3,790,809	839,860	\$4,629,669	\$441,657	\$1,070,222	\$1,070,222	\$1,070,222	\$1,070,222	85.4	\$681,473	\$266,048	\$6,481	\$391,277
Chicago, Rock Island & Pacific.....2 mos.	7,611	7,867,992	819,700	9,686,638	917,044	2,144,137	2,144,137	2,144,137	2,144,137	84.3	1,527,228	697,434	133,779	550,837
Chicago, Rock Island & Pacific.....Feb.	7,611	7,867,992	819,700	9,686,638	917,044	2,144,137	2,144,137	2,144,137	2,144,137	84.3	1,527,228	697,434	133,779	550,837
Chicago, Rock Island & Pacific.....2 mos.	7,611	7,867,992	819,700	9,686,638	917,044	2,144,137	2,144,137	2,144,137	2,144,137	84.3	1,527,228	697,434	133,779	550,837
Chicago, Rock Island & Pacific.....Feb.	7,611	7,867,992	819,700	9,686,638	917,044	2,144,137	2,144,137	2,144,137	2,144,137	84.3	1,527,228	697,434	133,779	550,837
Chicago, Rock Island & Pacific.....2 mos.	7,611	7,867,992	819,700	9,686,638	917,044	2,144,137	2,144,137	2,144,137	2,144,137	84.3	1,527,228	697,434	133,779	550,837
Chicago, St. Paul, Minn. & Omaha.....Feb.	1,663	926,838	84,957	1,011,795	101,935	182,223	182,223	182,223	182,223	82.4	191,563	114,333	47,531	74,219
Chicago, St. Paul, Minn. & Omaha.....2 mos.	1,663	926,838	84,957	1,011,795	101,935	182,223	182,223	182,223	182,223	82.4	191,563	114,333	47,531	74,219
Clinchfield Railroad.....Feb.	309	498,134	2,578	500,712	39,377	15,636	15,636	15,636	15,636	81.6	420,035	264,466	136,499	188,837
Clinchfield Railroad.....2 mos.	309	498,134	2,578	500,712	39,377	15,636	15,636	15,636	15,636	81.6	420,035	264,466	136,499	188,837
Colorado & Southern.....Feb.	1,029	293,343	17,976	311,319	39,971	11,571	11,571	11,571	11,571	90.8	32,691	23,718	35,881	2,164
Colorado & Southern.....2 mos.	1,029	293,343	17,976	311,319	39,971	11,571	11,571	11,571	11,571	90.8	32,691	23,718	35,881	2,164
Fort Worth & Denver City.....Feb.	804	319,896	24,855	344,751	26,144	15,859	15,859	15,859	15,859	86.3	123,802	94,110	70,146	49,648
Fort Worth & Denver City.....2 mos.	804	319,896	24,855	344,751	26,144	15,859	15,859	15,859	15,859	86.3	123,802	94,110	70,146	49,648
Columbus & Greenville.....Feb.	167	54,345	4,304	58,649	10,193	3,545	3,545	3,545	3,545	96.9	1,960	58	169	13,778
Columbus & Greenville.....2 mos.	167	54,345	4,304	58,649	10,193	3,545	3,545	3,545	3,545	96.9	1,960	58	169	13,778
Delaware & Hudson.....Feb.	848	1,851,412	90,931	1,942,343	202,772	45,833	45,833	45,833	45,833	86.8	268,292	198,162	215,635	136,878
Delaware & Hudson.....2 mos.	848	1,851,412	90,931	1,942,343	202,772	45,833	45,833	45,833	45,833	86.8	268,292	198,162	215,635	136,878
Delaware, Lackawanna & Western.....Feb.	992	2,662,723	506,203	3,168,926	275,733	103,566	103,566	103,566	103,566	82.4	627,920	272,792	452,529	341,851
Delaware, Lackawanna & Western.....2 mos.	992	2,662,723	506,203	3,168,926	275,733	103,566	103,566	103,566	103,566	82.4	627,920	272,792	452,529	341,851
Denver & Rio Grande Western.....Feb.	2,469	1,068,422	43,568	1,111,990	124,743	42,781	42,781	42,781	42,781	81.8	1,117,694	416,188	377,557	116,458
Denver & Rio Grande Western.....2 mos.	2,469	1,068,422	43,568	1,111,990	124,743	42,781	42,781	42,781	42,781	81.8	1,117,694	416,188	377,557	116,458
Denver & Salt Lake.....Feb.	232	74,901	2,736	77,637	10,292	1,388	1,388	1,388	1,388	69.1	27,355	13,345	16,129	64,034
Denver & Salt Lake.....2 mos.	232	74,901	2,736	77,637	10,292	1,388	1,388	1,388	1,388	69.1	27,355	13,345	16,129	64,034
Detroit & Mackinac.....Feb.	242	29,479	2,124	31,603	6,235	745	745	745	745	108.2	2,868	5,547	60,655	89,215
Detroit & Mackinac.....2 mos.	242	29,479	2,124	31,603	6,235	745	745	745	745	108.2	2,868	5,547	60,655	89,215
Detroit & Toledo Shore Line.....Feb.	50	333,038	.....	333,038	14,027	21,314	21,314	21,314	21,314	38.0	207,493	175,172	113,640	77,605
Detroit & Toledo Shore Line.....2 mos.	50	333,038	.....	333,038	14,027	21,314	21,314	21,314	21,314	38.0	207,493	175,172	113,640	77,605
Detroit, Toledo & Ironton.....Feb.	472	554,538	267	555,205	47,761	10,742	10,742	10,742	10,742	45.0	392,101	329,325	233,475	135,369
Detroit, Toledo & Ironton.....2 mos.	472	554,538	267	555,205	47,761	10,742	10,742	10,742	10,742	45.0	392,101	329,325	233,475	135,369
Duluth, Missabe & Northern.....Feb.	563	73,774	1,721	75,495	88,020	2,517	2,517	2,517	2,517	543.7	403,973	415,777	414,640	313,469
Duluth, Missabe & Northern.....2 mos.	563	73,774	1,721	75,495	88,020	2,517	2,517	2,517	2,517	543.7	403,973	415,777	414,640	313,469
Duluth, Winnipeg & Pacific.....Feb.	178	63,421	1,273	64,694	12,630	48,132	48,132	48,132	48,132	107.2	780,193	803,316	806,701	633,296
Duluth, Winnipeg & Pacific.....2 mos.	178	63,421	1,273	64,694	12,630	48,132	48,132	48,132	48,132	107.2	780,193	803,316	806,701	633,296
Elgin, Joliet & Eastern.....Feb.	446	684,324	.....	684,324	82,279	12,641	12,641	12,641	12,641	87.2	94,943	13,967	22,372	109,427
Elgin, Joliet & Eastern.....2 mos.	446	684,324	.....	684,324	82,279	12,641	12,641	12,641	12,641	87.2	94,943	13,967	22,372	109,427
Erie Railroad.....Feb.	2,045	4,264,763	384,228	4,648,991	404,248	1,092,334	1,092,334	1,092,334	1,092,334	76.9	1,155,196	853,048	71,541	394,241
Erie Railroad.....2 mos.	2,045	4,264,763	384,228	4,648,991	404,248	1,092,334	1,092,334	1,092,334	1,092,334	76.9	1,155,196	853,048	71,541	394,241
Chicago & Erie.....Feb.	269	682,511	9,442	691,953	58,817	83,566	83,566	83,566	83,566	53.1	389,019	311,138	69,693	4,455
Chicago & Erie.....2 mos.	269	682,511	9,442	691,953	58,817	83,566	83,566	83,566	83,566	53.1	389,019	311,138	69,693	4,455
New Jersey & New York.....Feb.	45	37,437	110,447	147,884	6,137	72,756	72,756	72,756	72,756	114.4	82,720	114,4	30,469	22,247
New Jersey & New York.....2 mos.	45	37,437	110,447	147,884	6,137	72,756	72,756	72,756	72,756	114.4	82,720	114,4	30,469	22,247
New York, Susquehanna & Western.....Feb.	131	267,585	24,402	291,987	22,178	53,619	53,619	53,619	53,619	70.2	91,632	68,564	53,249	32,700
New York, Susquehanna & Western.....2 mos.	131	267,585	24,402	291,987	22,178	53,619	53,619	53,619	53,619	70.2	91,632	68,564	53,249	32,700
Florida East Coast.....Feb.	839	544,159	335,475	879,634	118,780	21,319	21,319	21,319	21,319	56.9	434,671	359,454	307,599	302,086
Florida East Coast.....2 mos.	839	544,159	335,475	879,634	118,780	21,319	21,319	21,319	21,319	56.9	434,671	359,454	307,599	302,086
Fort Smith & Western.....Feb.	249	51,257	883	52,140	14,058	10,961	10,961	10,961	10,961	91.5	4,766	2,565	1,077	1,419
Fort Smith & Western.....2 mos.	249	51,257	883	52,140	14,058	10,961	10,961	10,961	10,961	91.5	4,766	2,565	1,077	1,419
Georgia Railroad.....Feb.	329	224,304	10,678	234,982	21,912	15,645	15,645	15,645	15,645	81.2	48,635	43,335	48,892	11,405
Georgia Railroad.....2 mos.	329	224,304	10,678	234,982	21,912	15,645	15,645	15,645	15,645	81.2	48,635	43,335	48,892	11,405
Georgia & Florida.....Feb.	465	82,036	1,470	83,506	88,913	18,706	18,706	18,706	18,706	95.7	3,782	1,322	4,427	29,418
Georgia & Florida.....2 mos.	465	82,036	1,470	83,506	88,913	18,706	18,706	18,706	18,706	95.7	3,782	1,322	4,427	29,418
Grand Trunk Western.....Feb.	1,008	3,257,966	49,551	3,307,517	172,671	33,438	33,438	33,438	33,438	81.6	262,408	184,845	77,516	123,671
Grand Trunk Western.....2 mos.	1,008	3,257,966	49,551	3,307,517	172,671	33,438	33,438	33,438	33,438	81.6	262,408	184,845	77,516	123,671
Canadian Nat'l Lines in New Eng.....Feb.	172	64,927	4,514	69,441	76,099	17,245	17,245	17,245	17,245	84.1	32,692	37,160	76,266	51,063
Canadian Nat'l Lines in New Eng.....2 mos.	172	64,927	4,514	69,441	76,099	17,245	17,245	17,245	17,245	84.1	32,692	37,160	76,266	51,063
Great Northern.....Feb.	8,361	6,717,943	492,219	7,210,162	800,105	1,739,103	1,739,103	1,739,103	1,739,103	80.0	1,279,627	225,848	59,534	1,156,908
Great Northern.....2 mos.	8,361	6,717,943	492,219	7,210,162	800,105	1,739,103	1,739,103	1,739,103	1,739,103	80.0	1,279,627	225,848	59,534	1,156,908
Green Bay & Western.....Feb.	234	85,817	533	86,350	90,203	17,258	17,258	17,258	17,258	86.1	12,496	6,955	5,291	5,245
Green Bay & Western.....2 mos.	234	85,817	533	86,350	90,203	17,258	17,258	17,258	17,258	86.1	12,496	6,955	5,291	5,245
Gulf & Ship Island.....Feb.	259	167,078	1,634	168,712	176,352	9,706	9,706	9,706	9,706	92.1	13,796	2,686	632	681
Gulf & Ship Island.....2 mos.	259	167,078	1,634	168,712	176,352	9,706	9,706	9,706	9,706	92.1	13,796	2,686	632	681
Gulf & Ship Island.....Feb.	266	147,457	12,175	159,632	176,352	9,706	9,706	9,706	9,706	86.5	25,409	5,383	26,052	50,751
Gulf & Ship Island.....2 mos.	266	147,457	12,175	159,632	176,352	9,706	9,706	9,706	9,706	86.5	25,409	5,383	26,052	50,751

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AMERICAN LOCOMO

For practically a hundred years the American Locomotive Company and its constituent companies have been designing, developing and building motive power for railroads. In this time we have learned many things — many things not only about locomotives, but about railroading, and of equal importance to us, about what we ourselves have to do as vendors of locomotives. ■ Railroading, like most other industries, always has been in a constant state of change, and it is of this evolution that the American Locomotive Company must not only be well informed, no matter where in the four corners of the world it should occur, but also must endeavor to anticipate. ■ It quite naturally follows then that some years back we recognized that some day the Diesel engine would step out into main line railroad service. Therefore, in 1929, the American Locomotive Company purchased the McIntosh & Seymour Corporation, an old and well established concern noted for its modern heavy duty marine and stationary Diesel engines. Later, through the coordination of the Diesel experience of the McIntosh & Seymour organization with the American Locomotive Company's knowledge of general railway conditions of operation and their facilities for maintenance and repair, a special line of Diesel engines peculiarly adapted to Railway service was perfected. ■ It can be seen, therefore, that we are vitally interested in both Diesel and Steam power units. ■ While considering future tendencies and the evolution that railroading in this country is now facing, one cannot overlook the visit made here last year by the "Royal Scot." Such schedules as 94 miles from London to Coventry in 82

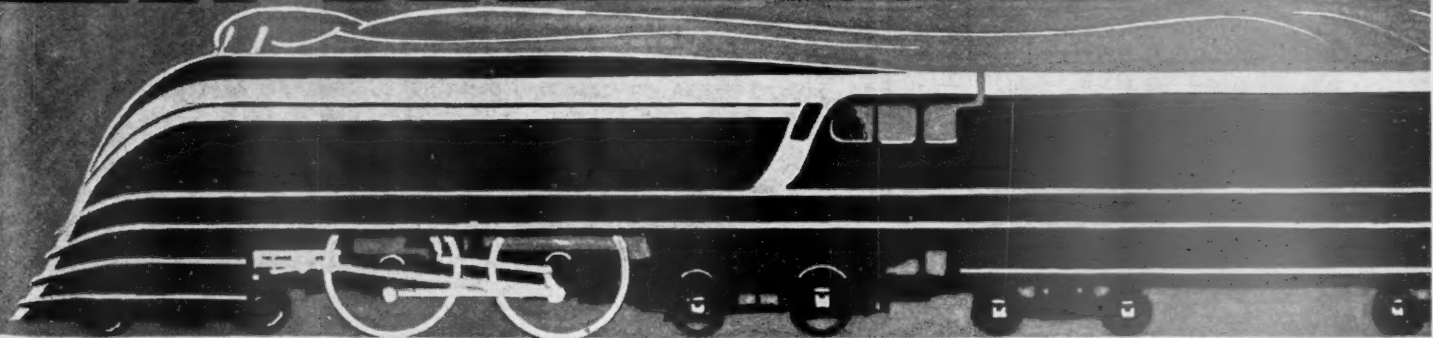
30 CHURCH STREET

LOCOMOTIVE COMPANY

minutes, 177 miles from Wilmslow to Euston in 172 minutes, and 152½ miles from Crewe to Willesdon in 142 minutes, all done with a Ten-Wheeler weighing less than 100 tons, are more than impressive. How is this possible? Note — the weight of train has been kept within certain limits — less power is therefore needed in the locomotive — all tending toward better service plus more economical operation — in other words better railroading.

■ And right here, in this same line of thought, the American Locomotive Company wishes to say "More Power" to the Union Pacific. It took courage to go to the extent that this Railroad did. But it is this kind of courage that later on often is termed foresight. We always have, and always will admire and applaud this type of progressive research. And we confidently make this statement—that come what will, the affect of this new U. P. train will be seen in practically all future passenger equipment. ■ So to sum up in a few words, the position of the American Locomotive Company is — Lighter weight passenger trains are coming and in many cases with higher speeds. Where straight economics dictate that these trains be handled by Diesel engines, the American Locomotive Company has a Diesel engine peculiarly fitted for this job. In many cases, straight economics will dictate steam operation, and for these cases the American Locomotive Company has Streamlined designs ready to offer. ■ Switching and Freight service is another story. But the American Locomotive Company, constantly looking to the future, has modern designs for these services, which, in the search for more economical operation, must be considered.

NEW YORK N.Y.



KUHLER

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Total	Net from operation	Operating income	Net railway operating income	Net ry. operating income, 1933
		Freight	Passenger	Total (inc. misc.)	Maintenance of— Way and structures	Traffic	Trans- portation						
Gulf, Mobile & Northern.....	Feb. 961	\$345,094	\$18,196	\$363,290	\$54,076	\$33,822	\$130,400	78.00	\$22,295	\$298,136	\$53,081	\$2,359	—\$20,362
2 mos. 961		726,368	33,066	759,434	112,921	69,028	260,448	74.12	59,909	590,909	144,309	43,748	—20,839
Illinois Central System.....	Feb. 5,011	4,948,053	607,963	5,556,016	377,027	1,219,458	2,266,531	72.5	308,350	4,372,891	1,215,175	1,081,211	602,463
2 mos. 5,011		9,931,343	1,234,124	11,165,467	767,025	2,524,378	4,667,176	71.6	632,763	8,971,888	2,448,403	1,954,155	1,185,393
Yazoo & Mississippi Valley.....	Feb. 1,658	794,105	50,260	844,365	52,298	21,328	384,856	70.6	645,153	268,189	156,381	51,191	—128,969
2 mos. 1,658		1,588,549	103,084	1,691,633	110,176	42,182	768,036	73.0	1,335,813	493,155	269,560	61,317	—101,590
Illinois Central System.....	Feb. 6,670	5,742,158	658,225	6,400,383	429,325	1,753,733	2,661,556	72.3	5,018,044	1,371,456	1,132,402	1,132,402	478,803
2 mos. 6,670		11,519,892	1,337,208	12,857,100	877,201	3,507,466	5,469,724	74.0	10,307,701	2,517,963	2,015,472	2,015,472	1,083,803
Illinois Terminal.....	Feb. 525	307,971	52,258	360,229	37,690	14,386	141,111	71.74	268,477	105,764	82,106	50,956	27,587
2 mos. 525		624,653	105,067	729,720	76,635	29,184	289,094	70.09	543,226	232,079	185,355	121,995	57,453
Kansas City Southern.....	Feb. 882	619,332	14,163	633,495	67,627	43,720	231,835	77.6	595,906	161,944	97,834	71,459	62,195
2 mos. 882		1,201,194	26,973	1,228,167	132,514	86,492	474,241	76.5	1,068,619	328,957	207,863	170,205	122,586
Texasarkana & Fort Smith.....	Feb. 326	147,509	384	147,893	8,141	12,187	35,615	46.6	70,322	80,614	67,802	51,863	32,973
2 mos. 326		289,453	808	290,261	15,765	24,374	71,215	46.8	138,407	157,356	130,831	100,305	75,773
Lake Superior & Ishpeming.....	Feb. 160	25,968	198	26,166	16,668	497	17,934	213.4	59,554	—31,668	—43,749	—46,749	—42,647
2 mos. 160		55,154	334	55,488	35,195	1,025	37,175	215.4	127,327	—68,228	—93,578	—98,877	—78,329
Lehigh & Hudson River.....	Feb. 96	110,576	153	110,729	13,777	3,185	41,812	75.1	86,063	28,561	18,597	7,192	9,186
2 mos. 96		234,925	509	235,434	27,573	6,268	85,028	71.2	174,243	70,512	48,607	24,598	20,845
Lehigh & New England.....	Feb. 227	336,645	511	337,156	26,889	4,897	99,752	63.0	213,550	125,203	105,792	112,159	53,177
2 mos. 227		686,780	1,024	687,804	51,023	10,263	202,685	65.0	431,291	232,360	197,764	199,157	50,508
Lehigh Valley.....	Feb. 1,353	2,925,218	192,886	3,118,104	208,343	1,536,884	2,357,384	70.6	981,533	786,016	644,325	644,325	239,947
2 mos. 1,353		6,095,755	374,013	6,469,768	418,593	2,032,532	5,000,799	72.2	1,923,489	1,532,300	1,265,127	1,265,127	161,391
Louisiana & Arkansas.....	Feb. 608	300,542	7,741	308,283	48,095	20,679	84,916	65.6	216,391	113,550	83,822	73,003	75,772
2 mos. 608		634,377	15,479	649,856	98,392	43,579	173,793	65.2	453,028	241,938	182,281	157,939	147,011
Louisiana, Arkansas & Texas.....	Feb. 255	66,790	254	67,044	11,331	9,162	25,251	76.0	53,967	17,071	15,115	2,304	—25,043
2 mos. 255		138,412	538	138,950	25,540	18,082	54,519	76.8	113,777	34,330	29,867	2,304	—25,043
Louisville & Nashville.....	Feb. 5,069	5,055,615	410,412	5,466,027	631,771	1,133,345	1,952,248	71.0	4,187,982	1,707,179	1,364,646	1,364,646	956,195
2 mos. 5,069		10,108,598	803,234	10,911,832	1,261,567	2,200,416	3,967,822	71.1	8,389,790	3,413,303	2,779,528	2,779,528	1,806,689
Maine Central.....	Feb. 1,046	1,469,171	164,119	1,633,290	184,666	10,241	74,448	87.9	745,662	103,050	54,763	15,225	93,245
2 mos. 1,046		3,038,342	328,238	3,366,580	369,332	20,482	151,382	85.2	1,516,382	263,831	168,073	42,036	151,494
Midland Valley.....	Feb. 363	96,483	413	96,896	11,397	2,457	27,676	58.2	58,740	42,126	35,917	26,474	37,298
2 mos. 363		200,440	852	201,292	21,888	4,823	57,647	56.5	117,972	90,928	75,569	57,945	65,208
Minneapolis & St. Louis.....	Feb. 1,627	483,979	9,863	493,842	45,986	21,015	272,522	92.8	492,682	37,977	5,242	19,124	—190,834
2 mos. 1,627		1,030,952	24,482	1,055,434	94,398	42,274	585,863	92.6	1,045,790	83,775	19,465	—21,613	—190,834
Minneapolis, St. Paul & S. S. Marie.....	Feb. 4,304	1,354,993	57,959	1,412,952	208,379	57,221	695,897	92.1	1,421,082	122,713	—18,706	—116,362	—442,008
2 mos. 4,304		2,681,617	130,403	2,812,020	410,723	116,192	1,456,765	92.2	2,931,555	148,813	—14,504	—36,843	—83,954
Duluth, South Shore & Atlantic.....	Feb. 559	132,034	7,985	140,019	31,779	5,518	69,538	98.1	148,738	2,530	—13,539	—24,713	—63,954
2 mos. 559		270,735	14,723	285,458	63,540	9,093	140,834	103.6	289,313	—3,020	—44,730	—67,794	—93,684
Spokane International.....	Feb. 163	27,320	1,242	28,562	7,004	1,716	17,702	111.8	36,367	—8,329	—7,785	—9,760	—17,710
2 mos. 163		55,146	2,477	57,623	13,370	3,445	36,857	109.1	72,251	—6,001	—13,958	—18,669	—36,092
Mississippi Central.....	Feb. 150	48,846	1,197	49,043	7,564	5,854	16,607	87.0	43,364	6,780	3,979	746	—11,153
2 mos. 150		91,812	2,287	94,099	16,721	11,713	32,228	93.5	90,788	7,410	1,798	—3,487	—18,719
Missouri & North Arkansas.....	Feb. 364	66,914	990	67,904	23,258	3,125	27,037	91.6	67,606	6,200	4,158	—4,406	—22,801
2 mos. 364		143,348	2,140	145,488	42,476	7,009	59,476	87.6	137,697	19,447	15,385	—3,244	—42,571
Missouri-Illinois.....	Feb. 213	62,791	561	63,352	17,354	2,387	22,459	79.0	51,136	13,609	8,809	—17,996	—17,996
2 mos. 213		133,397	715	134,112	30,160	5,007	46,818	77.3	106,357	31,218	21,543	12,492	—21,263
Missouri-Kansas-Texas Lines.....	Feb. 3,293	1,615,263	136,584	1,751,847	246,848	105,450	711,432	81.9	1,600,559	353,279	178,490	—2,766	—175,103
2 mos. 3,293		3,383,342	289,607	3,672,949	514,426	222,699	1,512,781	81.3	3,322,992	762,330	412,728	34,248	—306,375
Missouri Pacific.....	Feb. 7,361	4,752,307	272,804	5,025,111	604,970	213,183	1,982,562	76.6	4,213,039	1,288,106	946,096	559,079	181,611
2 mos. 7,361		9,668,297	580,266	10,248,563	1,209,950	437,449	4,119,847	76.9	8,618,952	2,592,311	1,911,530	1,116,283	502,709
Gulf Coast Lines.....	Feb. 1,765	809,477	29,114	838,591	110,000	40,272	258,954	66.56	588,058	295,420	248,073	139,240	16,704
2 mos. 1,765		1,621,153	59,797	1,680,950	227,698	82,372	512,589	65.26	1,157,932	616,289	520,613	321,447	143,942
International-Great Northern.....	Feb. 1,159	882,523	43,199	925,722	106,489	26,861	367,148	70.71	708,510	233,528	124,413	293,487	49,768
2 mos. 1,159		1,668,525	85,613	1,754,138	221,790	55,223	727,968	73.81	1,409,641	500,278	430,191	179,556	111,513
San Antonio, Uvalde & Gulf.....	Feb. 316	103,264	2,424	105,688	11,527	4,022	32,196	55.0	61,238	50,173	46,508	22,975	18,057
2 mos. 316		191,749	5,844	197,593	25,361	8,253	61,345	58.8	123,240	86,327	78,998	33,506	—29,497
Mobile & Ohio.....	Feb. 1,201	620,176	19,399	639,575	163,034	39,112	245,605	84.1	568,151	107,053	70,480	190	—67,186
2 mos. 1,201		1,264,938	40,739	1,305,677	317,070	79,679	511,532	84.2	1,159,532	217,644	150,425	5,671	—163,174

Continued on next left-hand page

LIGHTER WEIGHT RECIPROCATING PARTS

REDUCE TRACK STRESS AND MAINTENANCE . . .



Rods and pins as now designed will carry the piston thrust satisfactorily but they fall short of the modern locomotive designers' goal. « « « Lighter reciprocating parts are vital to a reduction in unbalanced forces and a consequent reduction in track stress and locomotive maintenance. « « « In Agathon Alloy Steel, Republic Metallurgists have developed a material with greater strength and shock resistance that will cut down weight without sacrifice of strength. « « « New locomotives should take full advantage of new materials to improve performance. Materials, too, should be modern as well as design. « « «

Toncan Iron Boiler Tubes, Pipe, Plates, Culverts, Rivets, Tender Plates and Firebox Sheets • Sheets and Strip for special railroad purposes • Agathon Alloy Steels for Locomotive Parts • Agathon Engine Bolt Steel • Agathon Iron for pins and bushings • Agathon Staybolt Iron • Climax Steel Staybolts • Upson Bolts and Nuts • Track Material, Maney Guard Rail Assemblies • Enduro Stainless Steel for dining car equipment, for refrigeration cars and for firebox sheets • Agathon Nickel Forging Steel.

CENTRAL ALLOY DIVISION, MASSILLON, OHIO

REPUBLIC STEEL
C O R P O R A T I O N
GENERAL OFFICES  YOUNGSTOWN, OHIO



Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from operation	Operating income	Net railway operating income 1933	Net railway operating income, 1934
		Freight	Passenger (inc. misc.)	Total	Maintenance of way and structures	Traffic	Trans- portation	General	Total					
Monongahela	177	\$372,812	\$854	\$373,666	\$28,944	\$352	\$78,335	\$3,148	\$138,352	36.7	\$238,389	\$220,148	\$151,900	\$50,025
Montour	177	713,311	1,803	720,662	60,975	734	151,022	7,193	277,568	38.5	446,750	406,750	246,974	112,420
Montour	57	137,360	137,360	274,720	45,554	1,082	30,038	5,099	94,413	68.7	42,947	52,826	52,826	106,566
Montour	57	235,883	235,883	471,766	18,559	2,145	60,412	10,561	182,953	77.2	54,088	46,610	76,150	23,975
Nashville, Chattanooga & St. Louis	1,203	894,166	70,082	1,073,658	128,026	58,516	402,892	56,892	889,090	82.8	184,568	121,897	121,897	97,664
Nashville, Chattanooga & St. Louis	1,203	1,793,207	141,940	2,135,249	259,489	117,391	818,662	114,813	1,770,535	81.1	412,714	339,200	281,801	10,177
Nashville, Chattanooga & St. Louis	165	30,407	1,231	31,638	8,537	648	7,009	2,880	21,349	89.2	4,909	2,198	1,869	17,155
Nashville, Chattanooga & St. Louis	165	29,119	2,514	31,633	17,195	1,312	14,280	6,377	44,171	84.9	4,909	7,538	681	17,155
New York Central	11,413	16,519,235	4,007,826	20,527,061	2,216,696	508,110	9,110,751	996,794	18,189,377	78.1	5,093,405	2,723,309	1,365,873	1,070,815
New York Central	11,413	33,595,986	4,430,887	38,026,873	4,399,626	1,001,345	18,333,261	2,009,209	36,406,879	76.5	11,160,445	6,399,766	3,820,110	2,574,978
Pittsburgh & Lake Erie	233	1,040,655	47,262	1,087,917	80,435	24,420	414,160	62,398	975,098	86.7	149,193	55,702	217,143	46,230
Pittsburgh & Lake Erie	233	2,054,010	96,241	2,150,251	158,355	50,100	830,737	134,376	1,960,148	88.1	265,359	84,659	399,407	186,833
New York, Chicago & St. Louis	1,691	2,594,825	50,451	2,645,276	173,653	97,598	951,430	119,192	1,730,392	63.2	1,009,216	859,117	606,542	211,751
New York, Chicago & St. Louis	1,691	5,174,459	107,810	5,282,269	360,366	195,530	1,906,610	249,922	3,161,411	64.2	1,957,025	1,655,073	1,124,921	344,392
New York, Chicago & St. Louis	2,067	3,032,144	1,778,700	4,810,844	784,281	61,763	2,285,948	210,363	4,470,229	81.4	1,023,599	673,422	163,607	236,516
New York, New Haven & Hartford	2,067	6,476,804	3,653,248	10,130,052	1,366,168	130,053	4,617,891	442,875	8,588,977	76.9	2,653,548	1,952,569	887,828	597,719
New York, New Haven & Hartford	2,067	205,951	219,403	425,354	7,903	28,765	913	913	43,945	20.0	175,438	141,633	101,245	110,326
New York, New Haven & Hartford	2,067	452,927	473,167	926,094	11,475	57,389	1,872	23,954	62,971	17.7	389,516	321,866	251,762	24,565
New York, New Haven & Hartford	568	720,048	803,243	1,523,291	69,534	372,948	1,872	23,954	62,971	78.4	173,542	128,295	91,069	161,566
Norfolk & Western	2,185	5,579,653	117,610	5,697,263	532,505	110,354	1,336,576	188,829	3,438,713	58.4	2,450,875	1,757,549	1,903,763	1,599,892
Norfolk & Western	2,185	10,331,719	236,844	10,568,563	1,254,559	225,187	2,672,789	388,959	7,001,168	80.6	3,667,125	3,161,125	3,378,495	3,194,603
Norfolk & Western	932	306,129	331,746	637,875	48,124	18,120	125,035	22,445	275,067	82.9	56,679	30,609	7,092	82,664
Norfolk & Western	932	615,908	670,528	1,286,436	121,697	34,690	258,255	44,761	562,749	83.9	107,779	55,518	12,949	181,574
Norfolk & Western	385	214,557	403,343	617,900	66,185	10,459	17,178	1,184	28,765	72.0	6,883	3,494	2,870	253
Norfolk & Western	385	214,557	403,343	617,900	66,185	10,459	17,178	1,184	28,765	72.0	6,883	3,494	2,870	253
Oklahoma City-Ada-Atoka	132	21,983	317	22,300	4,087	680	10,459	1,184	17,178	72.0	6,883	3,494	2,870	253
Oklahoma City-Ada-Atoka	132	50,061	703	50,764	8,066	2,226	2,226	2,226	35,996	67.7	17,889	11,617	1,871	602
Pennsylvania Railroad	10,511	19,216,543	4,369,995	23,586,538	2,226,583	5,137,370	12,979,486	1,290,366	19,538,421	75.1	6,471,215	4,833,281	4,098,442	2,618,641
Pennsylvania Railroad	10,511	38,868,312	9,271,091	48,139,403	4,395,615	10,655,698	20,196,200	2,624,292	39,666,444	74.5	13,564,970	10,306,017	8,765,763	6,136,000
Long Island	400	468,954	1,219,863	1,688,817	285,943	9,568	908,289	52,726	1,556,432	88.2	208,220	103,466	62,043	271,666
Long Island	400	961,029	2,503,780	3,464,809	424,426	23,314	1,801,108	108,231	2,943,887	80.8	696,368	489,527	169,462	577,356
Long Island	2,052	1,944,762	46,078	1,990,840	202,475	5,150	799,634	85,257	1,578,250	75.1	524,448	424,403	415,048	76,947
Pere Marquette	2,252	3,851,691	101,503	3,953,194	410,497	116,350	1,577,475	174,036	3,155,809	75.9	1,000,702	789,903	622,960	38,982
Pittsburgh & Shawmut	102	66,345	565	66,910	7,852	19,094	20,250	3,510	52,044	76.9	15,621	15,164	19,837	671
Pittsburgh & Shawmut	102	126,215	1,295	127,510	16,519	37,903	38,873	7,393	103,266	80.1	25,628	24,706	35,597	1,005
Pittsburgh & Shawmut	138	209,154	.....	209,154	15,744	12,014	44,220	12,263	143,957	65.5	75,723	52,138	77,091	18,083
Pittsburgh & Shawmut	138	391,062	.....	391,062	31,733	24,392	85,868	25,993	278,495	67.8	132,389	86,101	136,249	40,109
Pittsburgh, Shawmut & Northern	195	85,366	148	85,514	11,932	21,937	31,061	6,324	72,522	77.9	20,582	18,516	10,778	3,502
Pittsburgh, Shawmut & Northern	195	169,654	342	170,000	24,626	2,558	62,763	12,801	146,762	80.1	36,360	3,063	17,446	330
Reading	1,461	4,299,725	253,785	4,553,510	304,142	71,816	1,792,572	186,291	3,215,581	64.9	1,344,343	1,157,539	1,160,569	659,684
Reading	1,461	8,820,838	505,834	9,326,672	583,950	148,440	3,529,510	377,416	6,327,043	64.9	3,417,979	2,610,207	2,587,269	1,311,692
Penn.-Reading Seashore Lines	412	264,049	98,261	362,310	61,040	62,768	7,122	22,877	446,005	116.5	63,151	137,217	225,216	74,913
Penn.-Reading Seashore Lines	412	519,437	217,269	736,706	95,246	13,057	594,739	49,247	881,571	113.0	101,451	249,696	419,305	156,174
Penn.-Reading Seashore Lines	117	241,674	167,074	408,748	37,908	8,202	215,191	29,169	318,352	77.8	118,694	89,934	49,603	46,607
Richmond, Fredericksburg & Potomac	413	354,165	35,499	389,664	34,471	9,897	120,039	9,513	227,433	95.0	11,966	8,016	4,882	12,333
Richmond, Fredericksburg & Potomac	413	152,706	77,065	229,771	90,527	19,556	262,216	23,172	314,131	100.9	4,446	4,446	34,483	7,786
Richmond, Fredericksburg & Potomac	5,236	2,652,425	3,077,293	5,729,718	438,671	94,212	1,110,252	141,815	2,458,333	79.9	618,870	339,459	298,834	57,743
St. Louis-San Francisco	2,052	5,583,759	368,572	5,952,331	923,500	197,344	2,310,377	287,047	5,130,296	79.3	1,342,794	801,798	707,118	41,951
St. Louis-San Francisco	2,052	24,450	1,149	25,599	31,793	2,176	40,336	4,043	48,966	154.1	17,183	20,904	25,839	39,873
St. Louis-San Francisco	2,052	55,190	2,176	57,366	29,016	7,793	100,453	144.2	100,453	100.9	30,796	38,062	48,558	75,390
St. Louis-San Francisco	2,052	80,565	652	81,217	26,891	4,368	83,732	7,045	90,777	99.4	547	3,584	29,447	26,173
St. Louis-San Francisco	2,052	151,012	1,002	152,014	29,176	8,840	66,470	7,045	77,316	108.2	12,952	20,990	73,259	101,814
St. Louis-San Francisco	2,052	1,032,186	1,921	1,034,107	111,151	172,803	374,791	56,046	701,840	71.9	308,757	231,660	180,570	46,345
St. Louis-San Francisco	1,884	2,032,384	29,136	2,061,520	225,538	341,742	1,192,389	113,722	1,609,654	73.4	582,735	427,980	104,210	6,985
St. Louis-San Francisco	1,884	38,307	6,375	44,682	8,399	1,518	40,922	4,021	45,943	90.8	4,142	2,674	3,214	5,400
St. Louis-San Francisco	155	75,260	13,126	88,386	15,527	3,365	80,929	8,184	89,113	89.6	9,400	6,070	7,902	2,830

Continued on next left-hand page

Expedite Traffic-

—with "Union" Coded Continuous Cab Signals. No matter where the train is in the block, no matter how far past the last wayside signal or how far to the next, the cab signal tells the engineman when he may accelerate. Instructions ride with him over every foot, instead of every mile. Thus track capacity and speed and safety are increased. This system helps retain the goodwill of your patrons by providing uninterrupted service. There are other good reasons why you should install "Union" Coded Continuous Cab Signals.

Union Switch & Signal Co.

SWISSVALE, PA.

NEW YORK

CHICAGO

SAN FRANCISCO

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10 GOOD REASONS—

—Why "Union" Coded Continuous Cab Signals are effective in improving railway service:

1. Increase safety of train operation.
2. Expedite traffic.
3. Signal indications are continuously visible irrespective of fog, other weather conditions, curves or physical obstructions.
4. Indicate instantly any changed condition on track ahead.
5. Permit trains to increase speed at any point where a less restrictive indication is received.
6. Determine location of broken rails.
7. Supplemented by audible indication.
8. Cab Signal duplicated on fireman's side.
9. Prevent misreading of wayside signals.
10. Effect operating economies.

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic	Portation	General						
Seaboard Air Line.....	4,310	\$2,407,280	\$354,957	\$3,127,983	\$442,948	\$574,590	\$131,106	\$1,022,383	\$123,266	\$2,343,437	74.9	\$784,546	\$544,148	\$380,514	\$145,625
.....	2 mos.	4,985,103	710,846	6,381,382	935,485	1,168,785	264,847	2,105,283	252,817	4,814,090	75.4	1,567,283	1,084,806	755,454	343,460
Southern Railway.....	6,644	5,519,959	570,716	6,357,158	853,237	1,105,664	37,477	2,258,274	222,528	4,613,972	69.6	2,015,186	1,550,943	1,337,533	663,436
.....	2 mos.	10,793,835	1,190,693	13,087,106	1,742,285	2,261,357	283,352	4,624,615	467,190	9,353,626	72.2	3,633,280	2,702,886	2,307,099	1,465,385
Alabama Great Southern.....	315	309,421	33,267	371,090	70,319	69,995	10,653	127,366	13,627	293,954	79.2	77,136	49,132	54,643	48,255
.....	2 mos.	636,185	66,766	766,458	143,306	145,311	22,639	259,836	27,885	603,016	78.7	163,442	105,466	119,477	89,390
Cinn., New Orleans & Tex. Pac.....	336	910,676	72,295	1,036,111	120,545	149,065	24,951	259,704	35,648	614,444	59.3	324,972	358,972	324,972	157,241
.....	2 mos.	1,747,086	138,215	1,992,090	238,593	357,015	48,568	520,656	70,491	1,244,106	62.5	747,984	618,325	546,361	357,621
Georgia Southern & Florida.....	397	112,994	29,730	161,736	28,348	37,566	1,543	64,072	2,131	135,969	84.8	25,767	12,792	19,685	12,761
.....	2 mos.	216,467	56,867	316,765	56,292	77,222	3,123	130,606	4,238	225,894	88.8	34,891	22,344	22,344	29,472
New Orleans & Northeastern.....	204	137,478	17,504	166,909	27,926	33,896	5,761	61,365	8,439	138,757	83.1	28,152	5,236	10,715	57,856
.....	2 mos.	289,783	33,020	347,997	52,166	69,552	12,192	132,604	17,160	286,429	82.3	61,568	15,977	20,230	120,472
Northern Alabama.....	99	48,312	1,363	51,140	10,073	1,499	1,055	14,498	1,521	28,646	56.0	22,494	19,366	8,710	2,935
.....	2 mos.	95,958	2,930	101,977	19,922	3,010	2,302	29,330	3,254	57,422	56.3	44,555	38,261	19,328	3,974
Southern Pacific.....	8,905	5,514,810	1,098,798	7,323,163	932,316	1,500,061	242,760	2,686,765	508,392	6,019,863	82.1	1,312,300	490,420	190,646	727,672
.....	2 mos.	11,388,402	2,270,042	15,115,113	1,898,818	3,110,882	489,290	5,697,837	1,026,819	12,539,338	83.0	2,575,775	912,146	315,504	1,494,521
Southern Pac. Steamship Lines.....	...	312,531	10,580	334,956	12,721	123,647	15,107	239,970	19,256	410,701	122.6	75,745	76,352	76,484	94,972
.....	2 mos.	581,159	15,427	620,707	27,006	33,480	31,614	475,780	39,006	806,886	130.0	186,085	187,702	187,888	202,040
Texas & New Orleans.....	4,478	1,883,485	182,174	2,344,548	372,692	539,414	109,976	793,416	199,304	2,032,582	86.7	311,966	86,955	112,101	403,609
.....	2 mos.	3,815,117	359,193	4,738,729	777,874	1,037,881	220,766	1,684,993	403,302	4,169,020	87.6	589,709	140,090	260,722	646,054
Spokane, Portland & Seattle.....	552	286,221	19,122	330,675	23,778	33,671	4,845	115,881	12,678	192,306	58.2	138,369	80,709	61,281	26,365
.....	2 mos.	555,276	44,612	669,428	61,490	78,855	10,742	257,420	28,458	439,700	65.7	229,728	114,268	78,528	83,351
Tennessee Central.....	287	168,325	4,299	181,957	22,674	25,974	5,371	60,740	10,588	124,948	68.7	57,009	50,403	35,520	20,984
.....	2 mos.	341,842	8,504	369,202	49,600	49,283	10,376	123,031	21,137	252,844	68.5	116,358	105,541	72,371	50,537
Texas & Pacific.....	1,950	1,307,710	130,910	1,623,605	169,277	297,439	64,406	490,828	102,865	1,138,759	70.1	484,846	384,495	265,382	113,625
.....	2 mos.	2,671,832	272,295	3,327,158	344,097	579,203	128,171	1,019,996	214,564	2,312,587	69.5	1,014,571	813,527	591,045	262,542
Texas Mexican.....	162	62,093	722	68,730	7,947	10,844	2,832	27,939	6,252	55,814	81.2	12,916	8,620	4,779	20,425
.....	2 mos.	118,124	1,328	131,014	15,888	22,731	6,194	54,636	12,938	112,199	85.6	18,815	9,967	2,462	19,843
Toledo, Peoria & Western.....	239	116,737	11	116,697	32,643	9,341	14,368	36,191	7,147	99,690	84.0	19,007	17,486	4,240	9,254
.....	2 mos.	251,244	22	251,149	72,152	18,405	28,864	74,930	14,818	209,169	82.0	45,980	41,417	14,503	17,680
Union Pacific.....	3,767	3,623,443	275,856	4,337,677	271,702	1,159,594	101,205	2,409,376	264,616	3,258,636	75.1	1,079,041	626,756	492,993	248,843
.....	2 mos.	7,887,932	596,497	9,316,636	554,492	2,363,867	210,957	5,090,158	527,540	6,757,125	72.5	2,559,511	1,654,658	1,283,001	648,796
Oregon Short Line.....	2,504	1,217,024	65,264	1,453,508	101,478	250,345	27,045	463,039	84,005	1,003,652	69.1	449,856	222,894	165,964	52,930
.....	2 mos.	2,660,889	143,864	3,126,166	242,369	537,163	57,330	1,019,996	172,620	2,167,972	69.3	958,194	504,572	346,731	21,430
Oregon-Washington R. R. & Nav. Co.....	2,295	953,371	66,562	1,157,748	159,935	161,263	43,828	400,034	81,121	1,850,778	73.5	306,970	172,728	80,469	21,973
.....	2 mos.	1,961,087	141,008	2,347,436	443,130	334,055	93,542	859,407	166,690	1,906,516	81.2	440,920	172,588	26,371	540,214
Los Angeles & Salt Lake.....	1,241	958,155	68,598	1,116,080	125,590	172,313	38,236	352,555	52,528	764,274	68.5	351,806	231,302	123,965	23,438
.....	2 mos.	1,997,853	153,368	2,333,038	302,640	379,910	83,015	741,535	107,015	1,662,100	71.2	670,938	429,773	197,114	23,060
St. Joseph & Grand Island.....	258	199,434	1,330	206,237	16,091	20,474	2,278	61,151	11,185	111,429	54.0	94,828	78,705	54,319	21,967
.....	2 mos.	450,823	2,707	466,603	30,667	45,770	4,401	131,257	22,904	235,540	50.5	231,063	195,369	135,015	48,614
Utah.....	111	55,926	.....	56,017	9,024	16,285	510	14,313	5,111	45,243	80.8	10,774	3,472	9,373	43,250
.....	2 mos.	137,881	.....	137,881	32,656	36,700	974	32,656	10,604	97,815	70.8	40,422	22,193	1,891	76,035
Virginian.....	619	1,129,753	5,751	1,186,363	1,896	206,319	15,646	210,466	24,944	549,207	46.3	637,156	497,156	568,178	488,392
.....	2 mos.	2,308,227	10,569	2,423,295	19,287	417,910	32,445	426,341	49,298	1,118,716	46.2	1,304,579	1,024,379	1,157,029	1,024,844
Wabash.....	2,457	2,711,671	129,718	3,037,326	201,216	484,031	128,069	1,173,327	114,365	2,195,484	72.3	841,842	707,842	373,132	107,251
.....	2 mos.	5,274,124	281,806	5,949,432	595,674	982,508	261,514	2,356,377	243,767	4,449,996	74.8	1,499,436	1,231,031	537,033	336,717
Ann Arbor.....	293	240,031	1,954	248,429	19,946	46,868	10,242	112,836	9,886	199,773	80.4	48,656	32,410	14,929	18,890
.....	2 mos.	449,080	4,475	495,360	42,902	93,287	20,757	231,738	20,176	408,898	82.5	86,462	53,896	22,739	40,001
Western Maryland.....	891	1,125,468	6,400	1,159,988	119,088	237,172	31,967	296,686	34,915	721,506	62.2	438,482	368,482	398,204	269,271
.....	2 mos.	2,244,122	12,233	2,314,885	234,785	497,209	64,187	598,129	73,632	1,468,241	63.4	846,644	706,644	751,122	542,322
Western Pacific.....	1,213	620,600	9,369	654,825	93,219	51,359	51,359	272,562	30,026	604,632	108.3	50,193	19,013	6,666	126,636
.....	2 mos.	1,393,001	19,283	1,470,552	204,361	296,398	101,925	588,694	69,270	1,285,196	87.4	185,356	46,698	31,379	231,879
Wheeling & Lake Erie.....	511	876,097	1,688	925,002	68,807	233,185	27,484	277,170	26,873	653,519	70.7	271,483	182,238	170,416	81,087
.....	2 mos.	1,670,746	3,388	1,776,542	132,523	491,204	54,705	538,346	54,537	1,271,140	71.6	505,492	331,727	307,195	131,339
Wichita Falls & Southern.....	203	33,298	55	33,398	6,366	6,366	2,081	12,246	3,307	33,398	87.8	4,618	1,728	1,340	1,222
.....	2 mos.	71,084	101	84,584	19,379	12,952	3,778	26,552	6,861	69,422	82.07	15,162	9,385	2,421	2,246

News continued on next left-hand page



IN 1930 and 1931, a large western road purchased twenty-two modern passenger locomotives. This power has averaged over 10,000 miles per month with an unusually low maintenance cost.

The use of quality materials played a big part in this record-breaking performance.

It is significant that many of the modern locomotives which are breaking records for high mileage, long runs, low fuel consumption and economical maintenance are equipped with HSGI Wearing Parts. The more completely equipped, the greater the economies.

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Air Furnace **HUNT-SPILLER**
GUN IRON

News (Railway Officers)

(Continued from page 523)

June, 1914, he was further advanced to the position of supervisor of bridges and buildings on the Big Sandy division. In August, 1916, he was transferred in the same position to the Huntington division where he served until July, 1918, at which time he was promoted to division engineer of the Hinton division. In July, 1925, Mr. King became general supervisor of bridges and buildings for the system, with headquarters at Richmond, Va., serving in that

position until April, 1929, when he was appointed assistant engineer maintenance of way of the system with the same headquarters. Mr. King was appointed engineer maintenance of way in June, 1929, and served in that position continuously until his death. Mr. King was a member of the American Railway Engineering Association and had served as one of the directors of the American Bridge and Building Association.

J. W. Redmond, general agent for the Pere Marquette at Toledo, Ohio, died on March 25 following a long illness.

W. M. O'Brien, auditor of the Indiana Harbor Belt, with headquarters at Gibson, Ind., died on April 2 of a stomach ailment at Wauchula, Fla.

Eugene Fox, general freight and passenger agent on the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., died suddenly on April 2.

F. H. Gibbens, who retired as treasurer of the Delaware, Lackawanna & Western in 1899, died at his home in Montclair, N. J., on March 29. He was 91 years old.

Norfolk and Western Railway Company

Thirty-Eighth Annual Report

ROANOKE, VA., APRIL 2ND, 1934.

The Annual Report for the year ended December 31st, 1933, has been approved by the Board of Directors for submission to the stockholders. A synopsis follows:

The operated mileage of the Company was 2,132.07 miles. Including 27.21 miles leased from subsidiary companies and 25.47 miles operated under trackage rights, the first main track mileage was 2,184.75 miles and the total mileage of all tracks was 4,656.14 miles.

Following is a comparison of 1933 figures with those for 1932:

	1933	1932	Increase or Decrease
Revenue from Freight...	\$65,628,307.81	\$58,851,539.88	I. \$6,776,767.93
Revenue from Passengers	1,475,235.66	1,673,662.89	D. 198,427.23
Revenue from Mail, Express and Miscellaneous	2,159,347.38	2,250,408.29	D. 91,060.91
Total Revenue from Operations	\$69,262,890.85	\$62,775,611.06	I. \$6,487,279.79
Maintenance of Way and Structures	\$6,243,603.18	\$6,495,838.45	D. \$252,235.27
Maintenance of Equipment	13,483,654.03	11,136,166.09	I. 2,347,487.94
Transportation — Expense of Operation	15,335,719.14	15,831,447.39	D. 495,728.25
Other Expenses	3,954,330.99	4,282,080.77	D. 327,749.78
Total Operating Expenses	\$39,017,307.34	\$37,745,532.70	I. \$1,271,774.64
Net Revenue from Operations	\$30,245,583.51	\$25,030,078.36	I. \$5,215,505.15
Ratio of Operating Expenses to Total Operating Revenues	56.33%	60.13%	D. 3.80%
Federal, State and Local Taxes	\$7,340,000.00	\$7,200,000.00	I. \$140,000.00
Uncollectible Revenue Charges	5,328.37	14,768.80	D. 9,440.43
Net Rental of Equipment and Joint Facilities—Credit	1,756,098.98	1,345,787.98	I. 410,311.00
Net Railway Operating Income	\$24,656,354.12	\$19,161,097.54	I. \$5,495,256.58
Other Income — (Mainly Interest on Investments)—Net	1,537,570.77	1,767,450.86	D. 229,880.09
Gross Income from all sources	\$26,193,924.89	\$20,928,548.40	I. \$5,265,376.49
Interest Paid on Bonds and Equipment Obligations..	\$3,892,784.52	\$4,116,629.94	D. \$223,845.42
Dividends on Adjustment Preferred Stock—\$4.00 per share	919,692.00	919,692.00	.....
Balance of Income...	\$21,381,448.37	\$15,892,226.46	I. \$5,489,221.91
Earned per share on Common Stock outstanding..	15.20	11.30	I. 3.90
Dividends on Common Stock—\$10.00 per share for 1933—\$9.00 per share for 1932	\$14,064,830.00	\$12,658,347.00	I. \$1,406,483.00

	1933	1932	Increase or Decrease
Funded Debt outstanding at end of year.....	91,253,531.92	95,132,531.92	D. 3,879,000.00
Capital Stock outstanding at end of year.....	163,640,600.00	163,640,600.00	.....
Investment in Road and Equipment at end of year	460,893,605.89	461,235,050.62	D. 341,444.73

The investment in property devoted to and used in transportation service was \$325,263,720.03, an increase over the previous year of \$641,134.41.

The Company's equipment, owned and leased cost \$135,629,885.86 and consisted of 725 steam locomotives, 16 electric locomotives, 360 passenger train cars, 48,683 freight train cars and 1,995 work and miscellaneous units.

The Company decided to remove all wooden equipment from passenger train service. During the year 80 wooden passenger train cars were destroyed and will be replaced by 51 steel cars, delivery of which will be completed about August 1st, 1934. The estimated cost of this improvement in passenger train equipment will be approximately \$1,000,000.

Comparison of traffic and operating revenue figures with those of the preceding year shows the following changes:

Number of passengers	850,777	Inc.	74,922	9.66 per cent
Average haul of passengers	76.74 miles	Dec.	.11 miles	.14 per cent
Revenue from passenger fares	\$1,475,235.66	Dec.	\$198,427.23	11.86 per cent
Average rate per passenger per mile	2.259 cents	Dec.	.548 cents	19.52 per cent
Revenue freight carried	35,428,081 tons	Inc.	4,980,656 tons	16.36 per cent
Average haul of freight	276.74 miles	Dec.	5.51 miles	1.95 per cent
Revenue from freight transportation	\$65,628,307.81	Inc.	\$6,776,767.93	11.52 per cent
Average rate per ton per mile	.669 cents	Dec.	.016 cents	2.34 per cent
Average tons of revenue freight per train mile	1,472.61	Inc.	107.92 tons	7.91 per cent
Shipments of coal	28,909,816 tons	Inc.	4,013,422 tons	16.12 per cent
Shipments of coke	282,169 tons	Inc.	76,148 tons	36.96 per cent
Shipments of ore	343,608 tons	Inc.	244,179 tons	245.58 per cent
Shipments of pig and bloom iron	11,692 tons	Inc.	540 tons	4.84 per cent
Shipments of lumber	473,228 tons	Inc.	51,725 tons	12.27 per cent

The Company received from emergency freight rates and charges, effective January 4, 1932, to September 30, 1933, approximately \$2,758,269.93, of which amount \$1,859,380.73, received from January 4th, 1932, to March 31st, 1933, was paid over currently to The Railroad Credit Corporation, and the balance received after April 1st, 1933, \$898,889.20, was retained by the Company. To December 31st, 1933, The Railroad Credit Corporation has repaid \$387,534.28, leaving a balance due of \$1,471,846.45 as of that date, which it is anticipated will be further liquidated from time to time as loans to railroads are repaid.

On December 1st, 1933, Passenger rates on a portion of this Company's lines were reduced from 3.6 cents per mile for all passengers to 2 cents per mile for coach passengers and 3

[Advertisement]

cents per mile for Pullman passengers, and Pullman surcharges were also eliminated. Revenue passengers increased due to reduction in passenger rates, improved economic conditions and unfavorable weather for bus travel.

Gross Operating Revenues for 1933 were \$69,262,890.85, an increase of \$6,487,279.79, or 10.33 per cent. Operating Expenses were \$39,017,307.34, an increase of \$1,271,774.64, or 3.37 per cent. The property has been maintained to the Company's usual standards, the increase in maintenance charges being entirely due to maintenance of equipment.

Net Revenues from Operations were \$30,245,583.51, an increase of \$5,215,505.15, or 20.84 per cent. Net Income, after paying the regular 4 per cent dividend of \$919,692.00 upon the Adjustment Preferred Stock, was \$21,381,448.37, an increase, as compared with 1932, of \$5,489,221.91, or 34.54 per cent. Quarterly dividends of \$2.00 per share, a total of \$8.00 per share, were paid on the Common Stock, but the year's operations, in judgment of Directors, warranted an extra dividend of \$2.00 per share on the Common Stock, which was charged against earnings for 1933 and paid March 19th, 1934.

There was no change in the outstanding Capital Stock, which represented 64.20 per cent of total outstanding capitalization.

Funded Debt was reduced \$3,879,000., principally through payment at maturity of \$2,600,000. Equipment Trust 4½ per cent certificates and purchase of \$935,000. Norfolk and Western Railroad Company Improvement and Extension Mortgage 6 per cent bonds and \$332,000. Norfolk and Western Railway Company Divisional First Lien and General Mortgage 4 per cent bonds. Funded Debt represented 35.80 per cent of total outstanding capitalization.

Taxes amounted to \$7,340,000., and increase of \$140,000., or 1.94 per cent over 1932. United States Government taxes increased \$355,000. due principally to Capital Stock tax imposed by the National Industrial Recovery Act, and State, County and Municipal taxes decreased \$215,000. due to lower levies or assessments.

The more important additions and betterments were the laying of 87.76 miles of track with 131 lb. rail, the new American Railway Association standard rail, and the addition of 140,222 cubic yards of standard ballasting, almost entirely stone, in main line tracks. Important track layouts were installed at six coal operations on Buchanan Branch and Levisa Branch. Three-speed automatic train control system on Shenandoah Division, between Roanoke, Va., and Hagerstown, Md., was changed to automatic cab signal system, eliminating the automatic braking feature. Signal pole lines were reconstructed between Kenova, W. Va., and Sciotoville, Ohio, Walton, Va., and Bristol, Va., Evergreen, Va., and Forest, Va., and Roanoke, Va., and Hagerstown, Md. An additional telegraph line was installed between Naugatuck, W. Va., and Kenova, W. Va., via Big Sandy Line. Sixty-six grade crossings were eliminated during the year, six by road diversions and sixty by line abandonments.

The Interstate Commerce Commission authorized the abandonment of 19.43 miles of Abingdon Branch, from West Jefferson, N. C., to Elkland, N. C. Removal of tracks has been completed. The portion of said branch, 55.90 miles, between Abingdon, Va., on the main line, and West Jefferson, N. C., will be continued in operation.

The railroad, property and franchises of the Guyandot and Tug River Railroad Company were acquired by the Company on May 12, 1933, and the corporate organization of the Guyandot and Tug River Railroad Company was dissolved May 23, 1933. This Company's newly constructed line extending from Wharncliffe, W. Va., to Gilbert, W. Va., including yard at Gilbert, W. Va., constructed jointly with the Virginian and Western Railway Company, was placed in operation by the Company on June 15, 1933, as its Gilbert Branch.

The Company's Twelve Pole Line, 83.36 miles in length, between Naugatuck, W. Va., and Kenova, W. Va., was replaced by the Big Sandy Low Grade Line between same points, reducing the distance to 58.93 miles. Of the 83.36 miles replaced, 54.49 miles were abandoned by order of the Interstate Commerce Commission, and the balance, 28.87 miles, retained in operation, 4.14 miles as portion of Lenore Branch and 24.73 miles as portion of Wayne Branch. Removal of rails, ties and other items of value on this line was completed in November, 1933, and 53.78 miles of abandoned right-of-way were conveyed to the State of West Virginia for highway purposes.

Eighty new industries located on the Company's line, manufacturing food, textile, lumber, chemical, petroleum, coal, machinery and miscellaneous products, with a total capitalization of \$13,889,500. and employing 5,188 persons. Forty additions to established plants were completed, costing \$3,276,145. and employing 2,082 persons. Four new coal mines were placed in operation. At the close of the year there were 130 companies organized for producing coal and coke on this Company's line, with a total of 193 mines, of which 151 mines were in actual operation.

By Act of Congress, approved June 16th, 1933, the Recapture provisions of the Interstate Commerce Act were repealed. With

the repeal the hearings in the Recapture Case terminated. No payments had been made on account thereof. The Act of Congress of June 16th, 1933, also amended some provisions of the Valuation Act of 1913. These amendments did not importantly affect the obligation to continue the reports of property changes. Some simplifications have been effected by the Interstate Commerce Commission and also by the carriers in this work and in the future it will be possible to produce at short notice an estimate of value by Current Replacement Cost.

At the close of the year the Relief Fund had 16,405 members, equivalent to 80.75 per cent of the total number of employees, a decrease in the year of 794 members and a decrease of 10.24 per cent in ratio of members to employees.

At the close of the year there were 887 former employees on the Pension Roll, a net increase of 49 in the year, with an average pension of \$729.60 per annum, compared with an average pension of \$712.20 per annum at the close of 1932. On December 31st, 1933, there was a cash balance in the Fund of \$174,508.61, to which was added an appropriation in December, 1933, of \$737,178.19 and interest received during the year of \$163,307.49, a total of \$1,074,994.29, against which was charged \$626,508.29 paid to Railway Company in reimbursement of pensions paid by it in 1933, \$337,557.82 investments, and 16 cents taxes, leaving a cash balance in the Fund on December 31st, 1933, of \$110,928.02. At the close of the year the Trustees of the Fund held securities of a book value, including interest to date of purchase, of \$3,892,471.23 and a market value of \$3,371,952.20.

Mr. Elisha Lee, a member of the Company's Board of Directors and its Executive Committee since April 11th, 1929, died suddenly on August 6th, 1933, and the Board of Directors at a meeting held September 26th, 1933, elected Mr. Martin W. Clement to succeed Mr. Lee.

Mr. B. W. Herrman, Vice-President in charge of Traffic, died in Roanoke, Va., on March 18, 1934, after faithfully and efficiently serving the Company for more than fifty-one years.

Condensed General Balance Sheet—December 31, 1933

ASSETS:

Investments		\$514,542,562.57
Investment in Road	\$325,263,720.03	
Investment in Equipment Owned	112,839,114.34	
Investment in Equipment in Trust	22,790,771.52	
Sinking Funds and Deposits account Property sold	1,336,823.06	
Miscellaneous Physical Property	5,372,163.24	
Investment in Affiliated Companies	9,383,430.44	
Other Investments	37,556,539.94	
Current Assets		20,830,299.42
Cash	\$11,314,581.19	
Material and Supplies	4,909,572.18	
Other Current Assets	4,606,146.05	
Deferred Assets		13,772,759.89
Norfolk and Western Railway Company-Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds, Securities held for Relief Fund, etc.		
Unadjusted Debits		3,431,338.80
Total		\$552,576,960.68

LIABILITIES:

Capital Stock		\$163,640,600.00
Adjustment Preferred	\$22,992,300.00	
Common	140,648,300.00	
Long Term Debt		91,253,531.92
Mortgage Bonds	\$83,864,500.00	
Convertible Bonds	103,000.00	
Equipment Obligations	1,200,000.00	
Miscellaneous	6,086,031.92	
Current Liabilities		6,587,588.66
Traffic and Car Service Balances, Accounts and Wages Payable, Interest and Dividends Matured and Unpaid, Unmatured Dividends Declared, Unmatured Interest Accrued and Other Current Liabilities		
Deferred and Joint Liabilities		13,616,576.88
Norfolk and Western Railway Company-Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds, Securities held for Relief Fund, etc.		
Unadjusted Credits		67,669,658.29
Accrued Depreciation—Road, Equipment and Miscellaneous Physical Property	\$59,459,688.71	
Tax Liability, Insurance Reserves and Other Unadjusted Credits	8,209,969.58	
Sinking Fund Reserves		818,329.69
Corporate Surplus		208,990,675.24
Additions to Property through Income and Surplus—Road	\$21,426,218.71	
Equipment	23,305,326.27	
Funded Debt Retired through Income and Surplus	9,235,000.00	
Profit and Loss Balance	155,024,130.26	
Total		\$552,576,960.68

By order of the Board of Directors.

A. C. NEEDLES,
President.

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